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NOVEMBER 1989

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THE AMIGA DIMENSION

Commodore's career, like that of many international companies, seems to run in cycles. It is never all conquering for long nor is disaster total. It goes on the upswing in one area only to find the downward path somewhere else. A few years ago while the Amiga 1000 was struggling in the UK and the rest of Europe, Commodore established a solid user base for it in the U.S. In more recent times, it has been first West Germany and now the U.K. that have led the Amiga upward to public awareness and market success with the A500 while the U.S.A. has drifted down through a lack of A2000 sales.

The confident looks on the faces of CBM UK Managing Director Steve Franklin and his people at the Personal Computer Show, reported in this *AUI*, left no doubt that on this side of the Atlantic, Commodore today sees itself forging ahead especially with the Amiga and its PCs. It was with visible satisfaction Franklin announced "This Christmas we will take the personal computer market!"

The enormous - the largest they have ever had - and remarkably well-equipped Stand that CBM mounted at the Show was thronged by admirers from the general public and those who have business associations with Commodore. The overall feeling expressed was that in the two and a half years since Steve Franklin took over the job an astonishing transformation has taken place and substantial progress achieved.

I encountered one important dealer who told me he was finding the Amiga outselling the rival Atari ST by 5 to 1 both in hardware and software. A major software company told me that it had released a product on the ST and three months later on the Amiga. Even with the ST's three month advantage, the Amiga had almost caught up in sales. And there were many other stories of similar success.

While the rivalry between Commodore and Atari may not really be of great significance to users, the advance of the Amiga, even in the UK where the ST had a long lead on sales, will have a helpful effect. For Amiga users will benefit if the Amiga becomes more widely popular, because more software development companies will see the Commodore 68000 computer as a natural format for which to create. It also means that for hardware add ons, suppliers can produce more cheaply with increased numbers of potential buyers. It also permits Commodore to extend its business and support for users and spend more on research and development for the next generation of machines.

However, as Europe, especially the UK, has felt the impact of Commodore's growing popularity, the USA has over

the last year or so, in the Amiga field, made little progress. Amiga sales have slowed and development of new products fallen sharply. This was reflected at the recent Chicago AmiExpo where very few stands, only half a dozen or so, were occupied by companies who had been represented at the first AmiExpo in New York, just over 18 months before. Many of the original developers, concerned at the falling market, had deserted to MSDOS or Apple Macintosh which seemed to offer better prospects.

The problems Commodore faces for the Amiga in the U.S. are different from its business challenges in Europe and elsewhere. In the U.S.A., the PC is king. The biggest share of the home computer market is dominated by MSDOS, the machines for which are cheap, easily obtained and supported and widely understood. At the higher end, the Apple Macintosh has virtually cornered the DTP field. The A500, which has been CBM's winner in other countries, is hardly seen and the A2000, to which CBM looked for its major success, has been mainly popular only in 'niche' markets such as video studios.

However nothing remains the same in the Commodore world for very long ... Now, it seems that CBM is planning to fight itself out of difficulty with the A500. We hear that there will be, up to the end of the year, an estimated \$16 million (about £10 million) spent advertising the A500 across the U.S.A. It will also, in addition to the independent dealer network, be sold through a major chain of 350 stores, Connecting Point, and even soon appear in the famous Sears Roebuck mail order catalogue. A number of other substantial promotions should also support the campaign to bring the A500 to mass popularity.

Does all this matter to the non-U.S. Amiga user? Well, Commodore certainly needs a strong home, U.S.A. market; not only for financial but also for psychological reasons. The major technical development on the Amiga by Commodore takes place there as do the most important corporate decisions. And, except in the pure entertainment field, the most significant software and hardware products generally emerge from U.S. developers. They too need the reassuring confidence of success in a buoyant market on their own doorstep.

At last, it appears that CBM is moving in the right direction in the U.S.A. and elsewhere at the same time. Perhaps the business cycle will, finally, turn CBM's way around the world. If that happens, it should be good news not just for Commodore and its shareholders but for all of us involved in the Amiga dimension everywhere.

Antony Jacobson
Managing Editor and Publisher

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input devices into one, and, the company says, work faster and more comfortably as well. WRITE-ON offers the user: An all-in-one input system, Template display software structure, User definable "Softkeys", Pen touch icons, User definable character macros, Greater speed for beginners and occasional users alike.

Fantasvision

Following the signing of an agreement between Domark and Broderbund, Domark is now the UK supplier for Fantasvision, an animation program, already reviewed in AUI.

With Fantavision, you create any two objects or creatures in separate frames. The program then generates up to 64 'in between' frames to make your first drawing turn smoothly into the second. For in-

stance, you can draw an aeroplane in the sky, then in another frame draw it on the ground, watch as the plane glides in smoothly for a three-point landing. This animation technique is known as 'tweening' and replaces the frame-by-frame process that professional animators normally use.

Price: £39.99. Available for Amiga and IBM PCs and compatibles.

TV*TEXT Professional

TV*TEXT Professional is a package for lettering and graphics for video titling and desktop presentations. TV*TEXT Professional renders text, shapes, and objects in any number of colourful styles. Its full IFF image compatibility means TV*TEXT Professional can be used with a wide variety of graphics and animation programs, including TV*SHOW special effects

slide show program.

It outlines, shadows, metallics, strobes, edges, extrusions (3D) and also offers colour animated glows, glints, sheens, and cycles.

Price: \$149.95 (US). Includes Zuma Fonts Volumes 1,2&3. Contact: Zuma Group, 6733 N. Black Canyon Hwy, Phoenix, AZ 85015, (USA). Tel: (602) 246-4238.

"Speaking of Technology"

Graf Systems has introduced what they claim is the world's first portable transactions Voice Computer with VOICE I/O, bar code, and keyboard input" ... all in a 34 ounce handheld unit.

The compact system, provides the user with the full features of a desktop system, yet with the added versatility of the voice recognition and synthesis, anti bar-code.

The data acquisition system, features voice recognition for up to 5 user's with

any includes alphanumeric characters (36 words) plus Enter, Up, Down, Left, Right, Shift Mode, Space Bar, yes, No, Voice Output, Stop Listening and Attention (50 words total). An isolated word/phrase recogniser with a capability of 250 words or phrases produces up to 1,000 keystrokes per spoken word.

The device must first learn to recognise each user's voice. The user repeats each of the words (up to 250 total) that have been tailored to the users ap-



250 words each, and unlimited text-to-speech voice output. It also contains a large visual display with 16 lines by 21 characters. The computer is functionally equivalent to an IBM XT with 1MByte of RAM, yet the entire system is contained in a package approximately 9 1/2 inches long, 2 1/2 inches high and 4 inches wide.

Most popular programs, including a user defined custom vocabulary, are down-loadable from any standard desktop PC, then the system can interface into any standard application such as Dbase, Symphony etc.

The units basic vocabul-

plication. When completed, each user attaches his/her initials to the vocabulary file for the later retrieval. A once only training program is said to take about twenty minutes, depending on the size of the vocabulary.

By combining voice output for prompting and/or verification, for each entry, approximately 50 words per minute can be spoken.

Units are currently being sold for shipping and receiving stock, inventory and quality control, warranty inspection, appraisal servicing, and vital sign data collection by nurses. These are some of the many applications for this system is capable of achieving.

POCKET ETHERNET ADAPTOR

Networking pioneer Corvus Systems announced today that it is to market its pocket Ethernet adaptor for lap top and portable computers in the UK.

The Corvus Pocket Ethernet adaptor can be used to connect any IBM or compatible PC to an Ethernet network, and comes in the form of a small box (5.15" x 2.45" x 0.85" overall, including connectors), weighing 5oz — which is plugged into the parallel port of a PC.

The Ethernet adaptor has already received favourable reviews in the US magazine Infoworld and Corvus European Managing Director Mark Lewis believes the product will be equally successful in Europe.

"As far as I know", says Lewis, "we don't have much competition at the moment."

There are, of course, other Ethernet adaptors, but they seem to be more "rucksack" than "pocket"; they're more expensive; and you get stuck with having to buy an Ethernet card as an extra instead of getting it as part of the package.

As its name suggests, the Corvus Pocket Ethernet adaptor is "portable" in the true sense of the word. The product is self-contained and requires no expansion slot in the PC. Installation is simplicity itself — "You don't even have to take the cover off the PC."

The Corvus Pocket Ethernet adaptor, complete with Ethernet card, will retail in the UK at £495 and is available from authorised Corvus dealers.

Contact: Corvus.
Tel: 0635 580300

GVP 68030 Accelerator for Amiga 2000

Power Computing Ltd (UK distributors for Great Valley Products) has announced the availability of the new 68030 25mhz accelerator board for the Amiga 2000.

Aimed at the serious user, this board takes the Amiga into power micro class and speeds up considerably heavy weight graphics applications such as Sculpt 4D, Power tell AUI.

As standard, the board comes equipped with 68882 Co Processor and 4MB of 32bit 0 wait state nibble ram. The board can be upgraded using SIMMS to a maximum of 8MB. The 68030 board also features a high speed AT type hard disk interface.

Prices: £2,500 (+ VAT) for a system with 80MB Quantum AT hard disk; and £1,737 (+ VAT) without a hard disk.



The SANG Transputer Board

The SANG transputer board for the Commodore Amiga 2000 or an AT compatible computer now being released, requires an 8 bit PC slot and a Zorro 16 bit slot (Amiga 2000) at the AT height of 114mm. The basic transputer configuration includes one T800 and 1 MB ram which is expandable to four T800 and 16 MB ram.

The outstanding conceptual improvement in transputer design is their ability to perform parallel processing. Fast instructions for process switching on a single transputer can be combined with communication and synchronization of processes on different transputers, Digital Animations, the creators tell AUI.

Each transputer provides the capacity for parallel processing in and of itself. On a fully configured board containing 4 transputers, each transputer has 1 link routed directly to each of its 3 counterparts and 1 link routed to an external connector. These links provide high speed communication channels

(typical data rate of 20 megabits/second) running independently of the processor and the floating point unit.

In combination with a supporting 'harness' program consisting of a multiplex, a demultiplex and a flood-fill process, the four transputers act as a single transputer with performance 4 times greater than a single transputer operating alone.

Furthermore an "unlimited" number of boards can be cascaded via the transputer links, or connected to other compatible boards having a linker interface such as the video graphics transputer or the SANG parallel memory board.

For special purposes it is also possible to construct systems with hybrid structures such as pipelines or trees. Message routing algorithms can be developed for use in large networks.

Contact: Digital Animation Productions, 79 Mt. Vernon St., Boston, MA 02108 (USA).
Tel: (617) 720-2038.

MSII Scanner

The MS II is an automatic 50 page sheet feeding scanner with 300 dpi. With its fixed CCD lens it can scan an A4 page in 9.9 seconds; and it also provides extremely high accuracy, its creators claim. Omnipage, OCR software, is being bundled free of charge. The

MS II like all the Microtek range of scanners is compatible with the IBM PC and PS/2.

Price: £2048. Contact: Katakana, Manhattan House, Bridge Road, Maidenhead, Berkshire, England SL6 8DB.
Tel: (0628) 75641.

Prodata

ARNOR launch database. Arnor, the makers of Protext, have announced the release of Prodata, a database management program for the IBM PC and Commodore Amiga.

Prodata's features include Protext-like editing, selection of records by filtering, powerful printing options (like Protext), im-

port and export, password protection, file management screen, background printing, macros, compatibility with foreign languages, multiple indexes.

Prodata is being introduced at a special price of £55 until the end of November 1989, when the price will rise to £79.95. Contact: Arnor Ltd, 611 Lincoln Road, Peterborough, PE1 3HA. Tel: (0733) 68909.

Amiga Font Packages

New Horizons Software has announced ProFonts Volumes I and II for the Amiga computer.

New Horizons ProFonts packages contain high quality fonts for use with their word processor,

less, president of New Horizons Software. He also noted, with a high resolution printer, such as a 24 pin or laser printer, those fonts produce excellent results.

Both ProFonts packages include "System Mover," a

ProFonts I:

Beryl This is a sample of the Beryl font.
 Coal This is a sample of the Coal font.
 Gold This is a sample of the Gold font.
 Granite This is a sample of the Granite font.
 Marble This is a sample of the Marble font.

ProFonts II:

Bone Broadway Binnabar Corundum
 Feldspar Galena GRAPHITE
 Gravel Jade LED Mica
 Oblique Obsidian OLIVINE Port Avenue Sand
 Script Serpentine Silicon SEPIA Spinel
 Steel Stencil Talc Tiffany

ProWrite. The fonts contained in Volume I are suitable for correspondence and reports. Volume II contains fonts of a more decorative nature. Both ProFonts packages can be used with other programs that can utilize Amiga fonts, including Deluxe Paint II, PageSetter, and Notepad.

"The fonts in the Pro-Fonts packages were designed specifically for word processing and desk top publishing using dot matrix printers," said James Bay-

utility for moving fonts and other system files from one disk to another. Using System Mover simplifies the installation of fonts on Workbench disks; the user simply chooses the font or fonts to be installed and the program automatically handles changing and updating the appropriate files.

Price: \$34.95 each (US).

Contact New Horizons Software, Inc., PO Box 43167, Austin, TX 78745 (USA)
 Tel: (512) 328-6650.

Flexible keyboard

The Memory Pro keyboard from EECO is said to be a fully programmable IBM compatible device based on the industry standard 102 key layout.

However, there are 32 extra programmable keys, 21 of which can be re-legended because they have clear plastic keytops. Ten of these are grouped to the left of the QWERTY bank.

The keyboard includes 2k of EEPROM and this allows up to 60 macros to be stored. These can be stored on any key and at

any of four levels. These macros can have delays and variable fields built in.

EECO says any key can be remapped to any other location and that custom layouts can be uploaded to host memory using a utilities program supplied with the keyboard.

The keyboard is said to be compatible with IBM PCs and the PS/2 range, offering ASCII and RS232/422 options. There are selectable baud rates and programmable click and repeat rates.

Numbers Up

Mindscape International recently released an up-graded version of its popular Lotus-compatible spreadsheet Numbers Up in order to coincide with the release of 1-2-3 Version 3.0, the company tells us.

By loading Lotus 1-2-3 (or VP Planner) worksheets into Numbers Up, users can instantly access data from those worksheets, for example to insert a block of cells into a management report or revised price information into a product database. Calculations can also be done on the fly, for example to insert a price quotation into a letter or sales targets into a memo. In all instances, Numbers Up automatically reformats the data to fit the target application.

With Numbers Up, it is now possible to effective-

ly work with two Lotus spreadsheets simultaneously, cutting and pasting data between the Numbers Up and Lotus worksheets with less than half-a-dozen keystrokes. Mindscape tell us.

Using just 12K RAM, Numbers Up can handle worksheets up to 64x999 on any PC, XT, AT, or PS/2 compatible, standalone or networked, with 256K RAM and DOS 2.0 or later. Numbers Up will take advantage of LIM EMS for memory swapping instead of disk if installed. The program supports the TesSeRact Standard for Ram-Resident Program Communication.

Contact: Mindscape, PO Box 1019, Lewes, East Sussex, BN8 4DW.

Numbers Up will be released in mid August, with a recommended retail price of £49.99 inc VAT.

Shufflepuck Cafe

Play air hockey with the scum of the galaxy at the Shufflepuck Cafe — the latest exciting release from Domark and Broderbund.

It's late and you need a phone. There's not a lot of choice. Stumbling into a dingy entrance you enter the sleaziest dive in the galaxy. All that lies between you and the phone are 8 alien misfits, an obsolete

droid and a few 'friendly' games of Shufflepuck.

Well, maybe not so friendly. You've stumbled into the galaxy's last den of air hockey enthusiasts. And these goons take their Shufflepuck seriously!

Shufflepuck Cafe for Amiga, will cost £19.99.

Further information
 Tel: 01-780 2222.

Green link to Australia

A network providing peace and environmental activists with an electronic information system has set up a branch in Australia.

London-based Breennet, founded in 1985 to give professional computer communications to peace groups, added the seventh branch to its international network.

The organisation already has branches in the US, Canada, Brazil, Nicaragua and Sweden and aims to have more European nodes up in the next year, according to Greenet technical

director Jeremy Mortimer.

Mortimer said Greenet now runs more than 500 electronic conferences on all topics of interest to peace, environmental and human rights groups.

Greenet is an independent organisation, funded from charitable trusts and its own earnings which come from its email and conferencing system, in which different conferences are moderated by groups such as the Action Group on Chemical Weapons and Oxfam.

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PC-ALBUM

Freehand, the Surrey based Computer Graphics Systems company has announced the release of PC Album, a full colour integrated image database package. PC Album is a full colour image database incorporating database management with image processing technology, Freehand tell us.

The PC Album allows all

stored on an optical WORM drive and using the new Starlite image compression board available from Freehand, images can be compressed at a ratio of up to 40:1 without any noticeable degradation in image quality, the company claim.

An uncompressed full screen, full colour image which normally occupies over 300 Kbytes can be compressed down to just

PERSONNEL DATABASE

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Job Title: TeleSales Supervisor

Last Name: Bando
First Name: Gabrielle
Title: Miss

B. & M. Dates: 12/3/85-12/31/89
Start Date: 12/31/89

Salary: £14,500.00
Date Effective: 12/31/89

Address: Longwood
Baklands Lane
Cranleigh
Surrey GU6 8SS

Home Telephone: 2978000

System: IBM PC/AT 5.25 (5.1) - 10MB HD (50MB) 29.1.1990 29.1.1990



users to capture full colour images (with 32,768 colours on screen simultaneously) through a video camera or colour scanner and incorporate these images along with traditional textual database information. Freehand describe this software as applying to a wide variety of applications: Security Identification, Personnel Records, Estate Agents, Museums, Travel Agents, Inventory Control, Law Enforcement, Art Galleries, Photo Libraries, Design & Advertising Agencies, Model & Recruitment Agencies and Medical Applications etc.

PC Album has been designed to utilize the latest image compression and data storage technologies. Images can be

7 Kbytes with this special board. This means that transmission of colour images over the normal phone line is now very viable, and up to 50,000 images can be stored on one optical disk.

PC Album allows a user to manipulate an image database. The database is completely menu driven. Users can enter, view, query and report on PC Album without having to write one line of code. Yet for the ambitious application, PC Album comes with its own Program Applications Language.

Price: £15,000 (ex VAT) for the total system. £1,225 (ex VAT) for the PC Album. Contact: Freehand Ltd, York House, Tylers Court, Cranleigh, Surrey GU6 8SS. Tel: (0483) 268000.

THE FIRST COMPUTER OLYMPIAD

The ballroom at the Park Lane Hotel London recently played host to the world's first Computer Olympiad. The event was billed as being the largest competition for computers and computer programs ever held anywhere in the world. Eighty-six programs from sixteen different countries from as far apart as the cold plains of the Soviet Union to the dusty deserts of the Australian outback. The event was the brainchild of former international chess master David Levy. When questioned as to the point of comparing computers abilities against one another he described it as "Fun". This statement summed up all that happened within this the first Olympiad. The tension, the heartbreak, the competitiveness and the feeling of being part of a slice of history was all good 'FUN.....'

Fifteen of the worlds most popular thinking games made up the program of events. Scrabble, Othello, Connect 4, Chinese Chess and of course normal chess made up the main part of the competition, although a few contestants opted to program their computers to play popular card games. Bridge, being a favourite among the Americans.

The names of the various computer programs were put into a hat, each game having there own separate pile. Then two names were pulled out at a time and a knock-out system was incorporated with the winners name being placed back ready to be chosen for another round.

The final day of the Computer Olympiad ended in style. A gold, silver, and bronze medal were awarded to the top three programs in each category. Know particular country dominated the medals but England won a gold in Othello, Crab and Bridge.

Acer, the sponser of the whole event, whos headquarters are based in Tokyo are offering a 1.4 million dollar prize to the programmer of a computer Chinese chess program (Go) which can defeat the Chinese Chess World Champion. This particular event at the Park Lane didn't see the money leaving Acers hands, but the speed at which things seem to be progressing could see one of the many programmers with a larger bank account who are attempting to take the money from Acer.

Following the success of this event, dates have already been planned for the 1990, Computer Olympiad. If all goes well Acer will still be the Sponser and maybe the 1.4 million dollars prize money will still be standing..... What ever happens lets hope next year's Olympiad is just as much FUN...

MAXI Disk v2.0

Are you tired of running out of space on your floppy disks? Herne Data Systems say you can even fit 420k of data and programs on a 360k disk, 800k on a 720k disk, 1.4 meg on a 1.2 meg disk or 1.6 meg on a 1.44 meg disk. Using DOS version 3.2x or later, MAXI Disk formats your floppy disks with extra tracks and sectors not normally used by DOS to create special custom DOS compatible disk formats which take full advantage of the space missed by DOS. MAXI can be used on almost all sys-

tems running PC- or MS-DOS 3.20 or later (including DOS 4.0) to provide full access to the expanded capacity disks reliably and transparently.

MAXI will format floppy disks only. Unlike the DOS FORMAT program, MAXI cannot be used to format a hard disk, thus helping to prevent accidental losses of valuable data by inexperienced users.

Price \$19.95 (US). Contact: Herne Data Systems Ltd, PO Box 714, Station 'C', Toronto Ontario M6J 3S1. Tel: (416) 535 9335.

MIPs Away!

Sir Clive Sinclair has announced that he is close to releasing a 250mips (million instructions per second) RISC processor. According to Sir Clive, it will be targeted at the

specialist graphics market, bringing the cost of a high-performance graphics workstation down to around £2,000. It should arrive within the next 8-10 months.

Kenny Dalglish



KENNY DALGLISH SOCCER MATCH is the second of a trilogy of soccer games. The first in the series is a football management game, now the second game provides ARCADE ACTION of the match. The Following on from Kenny Dalglish Soccer Manager, Impressions have announced the release of KENNY DALGLISH SOCCER MATCH.

trilogy will be completed by the game now under development that will trace the fortunes of an individual player, trying to make it to big-time soccer stardom.

KENNY DALGLISH SOCCER MATCH brings new features to the arcade soccer game. Most notable of these are its graphics and presentation, and its new player-control system.

Simplified user interface PCs and workstations

What is claimed to be a significantly friendlier user interface for PCs and workstations has been developed at Siemens Research laboratories in Princeton, New Jersey. This software package is what is called a "tiled interface" — a program implemented under X-Windows to facilitate easier working.

In contrast with previous techniques, windows relating to various sub-tasks do not overlap on the screen, but are arranged adjacent to each other in various sizes. As the information relating to all sub-tasks remains visible, work on complex applications is made easier, especially when several sub-programs have to be pro-

cessed simultaneously.

The technique developed by Siemens arranges the position and size of the windows automatically. It is analogous to the application of tiles of various size, shape and colour on a wall and, therefore, it is known as the "tiled window technique". The software program — the tile window manager — controls the size, placement and lettering of the windows on the screen.

The tiled window manager is implemented under X-Windows, which is supported by a series of leading computer manufacturers. It is available from MIT as the X-Windows Version 11, Release 3.

Home Office Kit

The Disc Company has announced the release of The Home Office Kit solution package for the Amiga 500. The Home Office Kit is a complete pack designed for the new or existing Amiga owners interested in working at home, the company tells **AUI**.

The Kit comprises KindWords 2.0 wordprocessor,

Pagesetter 1.2 desktop layout program, Maxiplan spreadsheet, InfoFile database, as well as over 35 different styles of headline fonts and an extensive library of clip-art.

Price: £149.95 (including VAT). Contact: The Disc Company, 1 Rue du Dôme, F-75116 Paris, France. Tel: (33 1) 45 53 10 53.

AMIGA'89

AMIGA'89, the European Amiga exposition and conference, will be held November 10-12 at the Koln Messe Center, in Koln, West Germany. To-date, 90% of the exhibit space has been sold and a record 35,000 attendees are expected, claim Markt & Technik, the

trade show sponsors.

In addition to the strong turn-out, a conference and educational seminar program will introduce many areas of Amiga technology, with additional classes on advanced subjects. Commodore Germany are also official show sponsors.

Enter the European Superleague!

CDS Software has announced that programming has been under-way for the past few months on a new title — European Superleague — a graphic simulation of the toughest job in sport!

The player must think — and act — quickly, trying to balance training schedules, tactical plan-

Choose from any of the eight teams available: Liverpool, Arsenal, Rangers, A.C. Milan, Real Madrid, Bayern Munich, PSV Eindhoven or Marseilles. The aim is simple — to manage the European Champions by the end of the season. (It might not turn out to be the club you started the season with —



ning, squad morale and confidence, boardroom politics, a fickle press coverage and still have to contend with seven other, computer driven managers, all of whom play an experienced and tactical game.

even managers can transfer!). Match postponements, injuries, discipline problems, a stubborn self-opinionated club Chairman and temperamental star players might all conspire to stop you, but then that's football.

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Calling ALL Programmers

*Psst, need access to a standard file requester?
Want to implement a CLI command but you do
not want to write a template handler.
Mark Smiddy says - look no further than
the ARP library*

There is a long standing argument put forward by GEM's fans, which states: GEM is better than Intuition because it has a standard file request. Thank you, gentlemen, we accept your gracious comments and offer you these few words of wisdom: The secret is to bang the mice together!

You have to admit though, they are right. The lack of a Standard file request in Intuition has been a long-standing problem with the Amiga's iconic interface. All that might change if we all adopt a standard - the same one. Just look how IFF has made the Amiga stand out among other home microcomputers. No matter what the

graphics package is, if it supports IFF it can export to almost all other Amiga graphics based software.

At last I can make public the news you have all been waiting for, all Amiga's now have access to a standard file requester. If you read the report on Workbench 1.4, you can be excused for thinking my brain is out to lunch; think again. To tell the whole truth, this news is old - but it went almost unnoticed everywhere. The answer lies deep within the ARP library and, herein lies the problem - ARP is free and all too rare. If it cost money, everyone would have a pirate copy I expect! The only commercial UK program I have seen use ARP is HiSoft's superb, Devpac 2.

So why should you use ARP anyway? At the expense of a measly 17k (at present) you can have access to a vast library of routines that make programming the Amiga a lot easier. We will be covering some of the more interesting ones in a future issue, for now though here is how to create a simple file requester in assembler. This could have been shown this in C, but C programmers are big boys capable of working it out for themselves. Besides, I happen to find 68000 assembler easier to use than C. One other thing, the ARP library is completely compatible with the DOS library and could almost replace it.

M.S.

```
*****
* Demo of the file requester from ARP 33+
* The function prints complete filename to stdout
* Used Devpac II for simplicity and elegance
* Other assemblers will need the symbol table
* CALLARP macro is defined like CALLDOS macro
* BUT with _ArpBase in A6
* (c) Mark Smiddy (use and abuse as you please)
* Thanks to Charlie Heath for the Filerequester
* and the Microsmiths for ARP
*****
```

```
opt      c+
incdir   ":include
include  exec/exec_lib.i
include  libraries/arp.i
include  libraries/arpbase.i
```

```
OPENARP
move.l   a6, _ARPBase
```

doit

```
lea      select(pc), a0
CALLARP  FileRequest
```

case sensitive

I want to call EXEC
And ARP/DOS too

Open ARP library
Macro returns ArpBase in A6

These few lines are IT
The rest is for support!

continued on page 14

continued from page 13

tst.l	d0	User selected CANCEL?
beq.s	doneit	if yes, return to user. .
lea	select(pc),a4	This changes FileSelect colour
move.b	fr_FuncFlags(a4),d0	but not a lot . . . just
eor.b	#FRF_DoColor,d0	makes it stand out a bit
move.b	d0,fr_FuncFlags(a4)	can get the window struct. . .
*		This compiles a pathname
lea	select(pc),a4	base of structure
move.l	fr_Dir(a4),a0	pointer to start of dir name
lea	path_name(pc),a1	pointer to start of path_name
.loop		
move.b	(a0)+,(a1)+	copy name across

Continued next month

ARPing On

Mark Smiddy finds there is more to AmigaDOS than meets the eye - especially if you happen to be using the Microsmiths' version

The acronym ARP stands for AmigaDOS Replacement Project, which is a bit of a giveaway really. Still, if you consider the ARP system has been around for several years now, you may be wondering why you have not heard about it. I accept there will be some readers who have heard of ARP but many readers will not. You may also ponder the question: why have we waited so long to bring you the news? The answer is simple, ARP has only just reached completion with the 1.3 release. Also, no prizes for noticing that is the same version number of the current AmigaDOS.

This does beg the question, why would you want to replace AmigaDOS 1.3 in the first place? The answer is blowing in the code: AmigaDOS is written in BCPL, all the ARP commands are written in C or 68000 assembler. For this reason they are tighter, faster and more efficient all round. For another reason CBM would never admit - you have to look farther - ARPDOS demonstrates considerably fewer bugs. It has bugs, the authors admit that - they even give details - but there are fewer of them than in AmigaDOS.

Finally and best of all - ARPDOS is at present Public Domain! That means it will cost you, at the most, a miserly couple of pounds or dollars to get IN with the informed crowd, and get more OUT of your Amiga.

To give you a rather nice example, I have upgraded my Workbench 1.3 disk to ARP and changed the Startup script. After due experiment I have reduced the

boot time to around 50 seconds and simplified the whole process. No cheating, my Fastbench 1.3 does everything CBM's Workbench does - but it has more commands available including ARC! Sorry Commodore, the ARP startup does not need a startup-II file at all. So how did I manage it? Have I devised a fantastic new setup? Have I used some special multi-purpose commands? No. I just made use of the extended commands available under ARP.

Case in point, examine the way AmigaDOS 1.3 creates and assigns directories:

```
makedir RAM:t
assign T: RAM:t
makedir RAM:env
assign ENV: RAM:env
assign C: SYS:c
assign FONTS: SYS:fonts
```

And so it goes on. . . To be fair, Commodore have made those commands resident before using them so things have speeded up - a little. Now let us try that again, under ARP:

```
makedir RAM:t RAM:env
assign T: RAM:t ENV: RAM:env C:
SYS:c FONTS: SYS:fonts
```

Somewhat faster that way, is it not? Do not even bother to try that with AmigaDOS because it simply will not work. Each command only has to be loaded from disk once. This means there is no reason to make the commands resident in the first place, so you save memory and time overheads. The rest of the ARP startup commands work in much the same way; it is enough to

make you cry. The complete script is shown in Listing I.

The story does not end there though. Microsmiths, who created ARP, were not happy with making AmigaDOS look plain silly - they wanted to make it obsolete. In keeping with the Amiga tradition they have extended the rest of the DOS too. Remember the trick to get AmigaDOS spit out its command template by typing, for instance:

DIR ?

and the reply was:

Usage: DIR <Directory name> OPT a d i
Now look at the ARP version:

DIR ? Usage: DIR OPT/K « ADFHIS »
ALL/S DIRECT/S FILES/S HILITE/S
INTER=INTERACT/S SIZE/S:

It has a bigger command template, and if you need more help you can get it by typing another question mark at the Usage prompt! This is a feature of all the ARP commands, not just odd ones. Almost every AmigaDOS command has been extended in some way or other. The COPY command now has no less than eight arguments - and some of those use ARP's internal (environmental) variables.

Wildcards have been extended to use the old faithful *.* everybody can understand, PLUS the old #? to retain compatibility. Not only that, it is even possible to use exclusive wildcards or ORed searches. To show these in action: To get a directory of all the files EXCEPT the ones ending in .info you enter:

DIR .info

My version seems to be slightly bugged here, incidentally. However, what about getting a list of just the files with .asc or .txt or .s extenders? Tricky? Consider this:

DIR *. (asc txt s)

The strange character | used here repre-

continued on page 111

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Sonix Sound Trax Review

Aegis Development have released a couple of companion volumes for their Aegis Sonix music program. Each volume (2 disks in each volume) contains pre-written back-up tracks which you can play along with via the Amiga keyboard. The only requirement is that you do need to have the Aegis Sonix music software as well.

The songs have been arranged/composed by Jon Rami. Volume 1 contains 9 songs.... Grove, Well Well, Nice Try, Electric Demo, The Fair, Johnny Boy, Work, Amazing Grace and The Beautiful. Volume 2 has eight songs.... Funkier, Big, Honesty, Blues Man, Solman, Swinger, Fiftyz, and Baby Baby. All in all they are not bad arrangements and good fun to play along with. You just turn on the voices by clicking on the black numbered Sonix boxes. When the boxes are blue you will hear the voice at half volume. When they are white the voice is off. You can choose the voice to play along with by moving the small Sonix keyboard under the required voice box. The Solman incidentally, (on Volume II) let's you play 'interactive vocals'!

As well as using the disks for their intended purpose you get an extra bonus because the instrument and riff samples can be read by programs like the Aegis AudioMaster II, so it's possible to acquire some useful sound samples - there are some interesting sampled guitar riffs on volume 1.

Jon Rami performed with Stevie Wonder, Ray Parker Jr., and the Drifters amongst many others and has been involved in the world of professional music and audio through his work for Roland, VOX and Marshall Amps.

SoundTrax is a package for the home user who wants to play music without having the hassle of building songs track by track. If you cannot actually play an instrument, but like the idea of making music, then this sort of interactive music is a nice idea - it's the modern day equivalent of the pianola. The SoundTrax volumes are a good idea and will no doubt give a lot of Amiga owners many hours of enjoyment!

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The Reluctant Artist

Have you ever considered your printer as being a medium for your creative talents? Mark Long introduces us to this welcome idea with useful suggestions for the festive season – Graphics by Sharon Long.

With the festive season fast approaching, many of you will be thinking at some point about Christmas and New Year cards. If you do not want to choose from the usual selection available, but would much prefer to send your friends and relations a more personalised greeting, why not harness the assistance of your friendly Amiga and dot matrix printer?

If you are now in the process of ignoring this article completely, because you *know* your printer just is not good enough to do justice to your creative outpourings, then think again – it does not matter how poor your printer is – you *can* get good results – provided you make sure that the images you create on your screen are matched to the printer's output capabilities.

It is quite true that most printers – even the fancy ones from Mitsubishi, Integrex and Xerox, are incapable of output remotely comparable with the masterpieces the Amiga is capable of displaying, and this is even more true of the standard types of printer most of us have at home, whether ribbon, ink jet or thermal. But you should not just give up because of this – instead, you must begin to think of your printer as an artistic medium in itself, just like any other artistic medium, and as such, subject to the same kinds of limitations. Thus, armed with a lino-cutter and a piece of linoleum glued to a hardboard backing, you would not expect to, or even attempt to, reproduce John Constable's Haywain, or a Leonardo cartoon – but you might try for an interpretation of them (should your artistic

ambitions lie in that particular direction!)

Exactly the same is true for your printer – so that, whilst DeluxePaint on the Amiga gives you, within limits, certain artistic possibilities, your printer, which has quite different limitations,

gives you, similarly, a quite different range of possibilities.

What is not always clear, however, is exactly what possibilities *are* available to you, and how to exploit them to the full. So, if you are keen to try your hand at worthwhile images on the Amiga from a reproductive point of view, here is some step-by-step advice on how best to approach it.

If your printer is a colour one, then your first step should be to set up, and then print, a range of different colour palettes, preferably as much across the 4,096 colour range as possible. If you have no colour option, then apply the same test for a grey scale. In each case, the tests will rapidly demonstrate which colours and saturations work best – even if those colours are not at all true to their appearance on screen.

Once you have established a preferred range of colours, or densities of grey, you have something to start work with. Before you produce your masterpiece, however, you need to do some further tuning of your set-up. Print some sample files varying the Preferences' controls – density, half-tone or scatter etc. The best tests for these are those



which use a combination of solid colour in some areas, with closely spaced, but different colours, in other areas. Experiment also with printed size – certain combinations print better if small, others much better when large.

Do not expect to get any results where you will say "Wow! This is an absolutely perfect print-out!" What you will get, however, is a good indication of what goes together better than anything else – even, dare I say it, the best of a bad lot!

But this is only the beginning. Once you have done this, it is time to start creating some actual images on screen for printing out; obviously you will have your own personal ideas on what for you constitutes a suitably festive formula, from a traditional nativity scene through to a tinsel-bedecked Robocop(!), but here are a few ideas that we have come up with, both the screen shots and the finished printed output, produced on a Fujitsu 9 pin colour ribbon printer. On this machine we found that by far the best results were to be gained from geometric and "tribal" patterns. And as you can see from any comparison between screen and card, those results bear little, if any relation to what went on the screen in the first place, however pleasing those results are.

As a general rule, particularly as far as the Fujitsu printer is concerned, and

therefore for most other dot matrix printers, you will not go too far wrong if you observe the following guidelines: keep it simple, the ordinary dot matrix ribbon cannot handle fine detail all that well; separate your areas of strong colour with bands of white – in fact, use a lot of white! Try to avoid too large areas of any single colour – try picking bits of pattern as a brush and using it as a fill pattern to colour large areas. Again, it is better if the chosen pattern has a lot of white in it. Use features the computer deals with well, borders, patterns, repeats made with simple brushes, symmetry. Designs based on lino- or wood-cuts seem to work best. Go for pure(ish) colours. Printers tend to 'muddy' dull colours and often have difficulty with greys not based on saturations of black (at least, ours has).

If you cannot print in colour and feel it essential to have colour cards, there is no real problem, especially if you design on screen in black and white, as very good results can be obtained from a water colour wash or colour pencil shading over your monochrome print. And do not despair if you only have a thermal printer – photocopy the results onto a better quality paper; your local instant print shop will almost certainly have a wide variety of papers in a similarly wide range of colours.

Once you have finalised the mar-

riage between design and final product, all that remains is physically to manufacture your cards. A visit to your local instant print shop or stationery store should provide you with all you will need, either a suitable blank card, or perhaps a specialised greeting card blank, pre-printed with a border, usually in gold, and sometimes with a message inside. A word of warning, if you choose this option, visit your instant print shop first, before you print everything out the wrong size! Whichever you decide, you will need a repositionable adhesive, preferably Spraymount, to stick the pictures in position, although Prittstick or Copydex would probably do just as well. And one final tip – thick, particularly textured card, can be quite difficult to fold, so use an old printer's trick – a dessert spoon! Score the centre of the card with the end of the spoon handle, fold the card gently, and flatten it down firmly with the bowl of the spoon – it is simple, produces a perfect fold, and avoids fingerprints!

All this might seem a daunting task, but remember, your set-up procedures will only occur once, so future production lines will be up and running both easily and very quickly. And what is more, you will have fine-tuned your computer and printer for a great many other projects. Merry Christmas!

M.L.

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Accessing the hardware from C

Mike Nelson dives into C...

The Amiga is equipped with one of the most comprehensive and advanced operating systems on any computer and leaves very little for programmers to panic about when it comes to making screens, windows, menus etc. under Intuition. The graphics library takes care of building other displays and drawing lines, circles or even filled polygons. However, it is sometimes desirable to take your code past all of this and directly access the heart of the computer at the level of the hardware, particularly for writing games which are not designed for a multi-tasking environment (although with a bit of care it is perfectly feasible to do so).

"There are many interesting registers which you can play about with, including those controlling the video display, sprites, blitter, and sound as well as the Input/Output chips"

The ROM Kernel does provide device handlers for accessing hardware but they are extremely cumbersome to use and sometimes they are simply not fast enough for many applications. The only real alternative is to read and write directly to hardware registers, more or less commandeering resources such as joystick positions or audio hardware for the exclusive use of your program. Since most Amiga users are Commodore '64 graduates, the judicious use of Peek & Poke equivalents may even be a welcome relief from all those structures and members and many of the princi-

pals of attacking the hardware are common to both machines!

The ideal course, advocated by the designers of the operating system (naturally!), is to "ask" for a piece of hardware which you only receive if no other program has a stranglehold on it, and relinquish it after use. This is unsatisfactory in many cases as you may only be guaranteed access every 1/60 of a second. Such timing OK for some situations, but if any kind of animation is involved, the time scale is nothing like fast enough: your program can get held up waiting for the OS to give you a slice of the action (e.g. some joystick info).

The Amiga is supplied with a wealth of amazing hardware which is the subject of the Hardware Reference Manual (available from all good bookshops and published at great expense by Addison-Wesley). The book is biased towards

machine-language but that need not deter the intrepid C programmer, illustrating the powerful low-level usage available from this language. Perhaps a word of caution is in order here. The book is extremely detailed and the subject confusing at first as there are many interesting registers which you can play about with, including those controlling the video display, sprites, Blitter, and sound as well as the Input/Output chips (CIA's), and not all of these are realistically programmable from C.

So what's it all about? Firstly, we must know where in memory the custom chips are located so we can access their registers. This is where things get slightly dodgy as, in the far-flung future, Commodore Inc. may decide to move this location in the MK-36 Amiga of the 1990's and your program will resolutely fail. In fact, knowing the Amiga it will



undoubtedly crash the machine. Still, we have no real choice but we can take precautions to minimise the effort of re-coding, should such an event occur. We can allow the compiler to set part of the problem right and use macros at the top of the program for any "magic numbers", otherwise known as "Pokes" to '64-bashers.

The program this month is mercifully short and so we can explain in some detail each step in the proceedings. All it does is to print the current status of a joystick in port 2 of the computer, including the fire button with an added bonus of playing about with the power LED. The `#include` file `hardware/custom.h` simply contains the definition of the Custom structure. This provides a simple but effective means of accessing any register found in the custom chips. Each register is named and the label is used consistently throughout the Amiga documentation. The name represents an offset from the start of the chip (currently at Hex. \$DFF000) and while most of the registers are sixteen bits wide, a few aren't so this structure automatically accounts for this. Thus all we have to do is to declare a structure of type "Custom" and to access any given register is easy:

```
extern struct Custom custom;
joy = custom.joy1dat;
```

This code sets everything up and sets the UWORD joy to the value in the appropriate register. The BASIC equivalent is this:

```
custom = $dff000
joy1dat = 12
joy = Peek (custom + joy1dat)
```

How does the compiler know where in memory the declaration for "custom" is to be set, as my program does not actually set it? I am unsure of the precise mechanism whereby "custom" gets set to 0xdff000 but it works so don't knock it! The use of "extern" in this manner is somewhat unconventional as one of the selling points of C is its portability, but the likelihood of anyone running into problems trying to run this code on a Sun workstation is limited, to say the least! Seriously though, this may be a source of error if your compiler does not recognise the request and you will have to set it yourself in a manner similar to that described below for the CIAs.

Once we have set "joy", we need to test the bits in it to determine the position of the joystick. This is slightly more complicated than on the '64 as the register (joy1dat) also doubles up for input from the mouse. Pressing the stick right will result in bit 1 being set, whereas left sets bit 9. Forward and back are bits 9 and 1 tested after being Exclusively ORed with bits 8 and 0 respectively. The calculations performed are relatively straightforward and so will not be discussed in depth here. Try them out for yourself if you don't believe me!



The fire button also needs to be catered for if you are to release that ultimate zap, sending the super-alien exploding into OBLIVION-MODE. This data is inconveniently located in the CIA. The Complex Interface Adapter is only slightly more forthcoming with information than the Intelligence Agency with which it shares an acronym. As the name suggests, these two chips are more concerned with Input/Output than the custom chips (though why the fire button should be thought of as a different entity to the rest of the joystick escapes me, but I am just a programmer). They have a different location in memory (0xbfe001 in this case) and my compiler seems loathe to actually set the cia variable for me. Still where machine has failed, programmer must boldly go and I use the macro CIA-CHIP to substitute for that hex. address. The variable is set up in the statement:

```
struct CIA *cia = (struct CIA *) CIA-CHIP;
```

This is quite an abbreviated statement, performing several tasks. Its appearance is very confusing for the beginner and crops up in most Amiga programs so it is worth explaining. We are telling the compiler to use the template CIA (declared itself in `hardware/cia.h`) when declaring a pointer to the chip, thereafter called cia. This name could have been anything, incidentally. The variable "cia" is actually a pointer and not a structure, as indicated by the preceding asterisk. The next step is to set this pointer to be hex. bfe001, using CIA-CHIP. The compiler will complain if

you omit the cast construct (struct CIA *) and grudgingly work, but this is simply a means of coercing the ULONG figure of 0xbfe001 into an address format, although the actual number is identical. Note that you may have to do this for the custom declaration if your compiler won't set it up for you.

We now should have access to the CIA we require for the fire button data and can use the `->` operator to set the UWORD "but" to peek in the appropriate register. (This is christened "ciapra" and from a compiler point of view, is actually an offset from CIA-CHIP). Paradoxically, I think, bit 7 is actually cleared when the button is depressed and set upon release. This is easily detected by using a logical AND 128 with a NOT (!) to turn things our way.

Whilst searching through the memory maps for the fire button location, I came across a bit which controls the brightness of the power LED of the computer. You too can now affect this thanks to the miracle of modern technology and AUI. As I am sure you will so thrilled at this prospect and don't fancy waiting for Uncle Lattice to compile, try the following BASIC pokes:

```
POKE 12574721, PEEK (12574721)
OR 2 ' Dim LED
```

```
POKE 12574721, PEEK (12574721)
AND 253 ' Brighten
```

There, that is sufficient BASIC for anyone and leads us nicely to the conclusion. Next month I shall take a look at sound generation and delve into the audio hardware using the techniques described above.

M.N.

Only Connect...

Mark Smiddy reviews a great innovation that looks set to revolutionise today's electronic office

Spaghetti - that is what this is all about. The inevitable bird's nest of interconnecting wires travelling between every computer and its plethora of peripheral devices. When I heard of Datalink I balked at the prospect of reviewing another variation on the tired old serial theme. As things turn out, this has been a case of severe technical dyspepsia: I came, I used, I ate my words - and they gave me severe indigestion.

Verran Electronic's Datalink, can be described as a TTM DTS or Through The Mains, Data Transmission System. In English, this means you can connect your Amiga to almost any other peripheral in the same office (or building come to that) without wires! So what, I hear you cry, why would I want to?

To take a simple example, imagine you have an office containing just an Amiga 500. To this you want to add a daisy wheel printer and/or modem. In a perfect world this is simple enough - but what if the nearest phone jack is downstairs? Or, you want to use the printer without waking the baby?

You could fit an extension to the phone, but that is a messy job; especially if it has to go up an open staircase or through the ceiling. What about the printer then? The best place for this is probably downstairs too, in the broom cupboard.

It is here the Datalink comes in. All you need to do is connect two units to the mains supply and to the respective devices: that is one to the Amiga and one to the peripheral. You just switch on

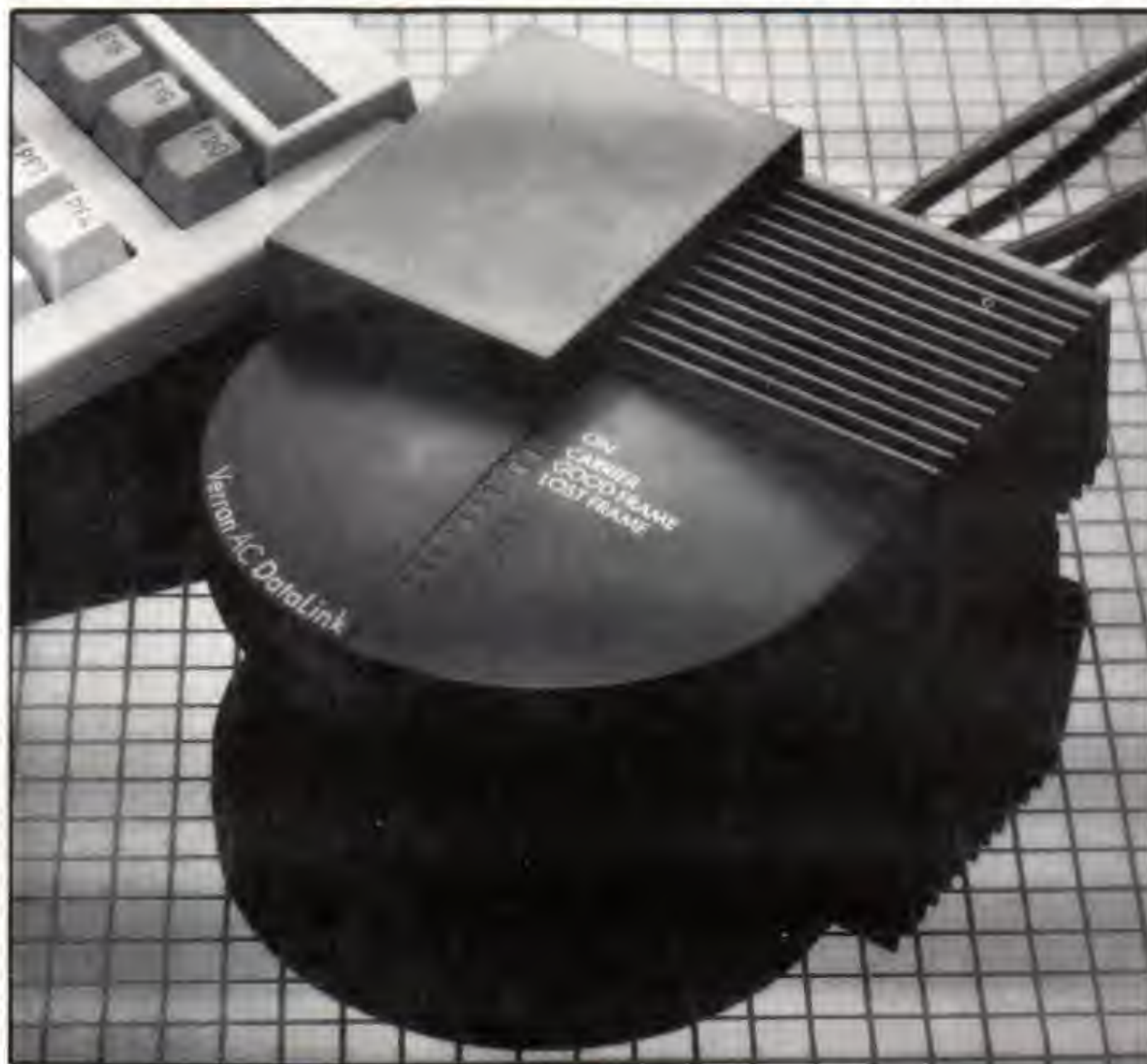
and use them as normal. If you were rich enough to afford three Datalinks - and therein lies the catch - you could have one connected to the printer and one to the modem. Changing the device is a simple matter of swapping a lead and flicking a switch. This is all done at the computer, the Datalink does the rest.

For a more realistic example, take an office like mine. Here there are no less than five computers - from an Amiga to a Z88 - and just one overworked LC-10 printer. By the addition of just three Datalinks I could move the LC-10 somewhere else, and have any two of the computers sharing it at any time. As things get even more complex, say ten computers sharing three printers: any computer could in theory, talk to any printer. The only proviso is: not more than two Datalinks can talk to the same printer (or device) at once; and others with the same address must be switched off.

Now you know the theory, how does the system work in practice? The first time I plugged on into my Commodore PC10, it refused to boot saying the keyboard and LPT ports were dead! One combined attack of angina and migraine later, I tried again and it worked. Quite what went wrong I am at a loss to explain, Verran suggest the PC - Commodore would doubtless blame the Datalink. Who cares, it works now. Once the system has been set up it performs as if the Datalinks were not there. The transmission rate is claimed to be one A4 page every three seconds, fast enough for every printer I have ever used.

Setting the Datalink up is a doddle - once you decode the manual which, to be fair is very good. It could be better for non-computer-literate people. For the record, you configure the main options on a set of DIP switches then press a button to program the unit. The setup is stored in non-volatile RAM so it is always correct.

Changing the address - or settings -



of any Datalink is as simple as flicking the correct DIP switch and re-programming. The operation takes all of ten seconds once you are familiar with the system. For the sake of memory, Verran have left a set of blank switch templates in the back of the manual so you will remember which address corresponds to each logical device. It really is simple when you get used to it. . .

As I have already hinted, the price of the Datalink does look a little prohibitive. More especially when you consider you must have at least two (transmitter and receiver) to make a working system. The question is, why are they so expensive?

For the answer you have to understand the technology that has gone into these machines. Each one has its own Zilog Z8 computer on-board running at over 12Mhz. The Z8 is a very powerful CPU with its own internal ROM and

RAM - making it a true computer on a chip. Combined with this is a specially designed thick-film hybrid driving the TTM FM transmission system. It should suffice to say this is VERY expensive technology. The development costs, which must have been enormous have not, in my view, been integrated too much into the final cost of each unit.

As an aside, you may be interested if the Datalink looks as good in reality as it does in these pictures - it does; it feels good too. The whole package has been produced with the sort of keen professional edge that has been sadly lacking in so many recent British products.

I only have one cavil, the socket cover seems to suffer from a fragile hinge. While I hope to be proven incorrect, I expect ham-fisted (industrial?) treatment would soon break this non-essential item. The remainder of this remarkable unit - right down to the non-

slip feet - is finished off beautifully; even Ferrari could be proud of it.

I have to admit, despite some initial problems getting the things started, the Datalink system is superb. This has to be the most effective way of connecting peripherals in any office or even school! It remains to be seen how long Datalink will retain its crown as the only unit available; that is, before Taiwan produces one at half the price. I would like to see the Datalink enjoy a long reign - it is a product of quality where standards have not been sacrificed for cost. Highly recommended.

Product: AC Datalink. Price: £175 + VAT for each unit.

Contact: Wilding Office Equipment and Dixons Business Centres. In case of difficulty, you can contact Verran direct on: 0252-872544.

How does it work?

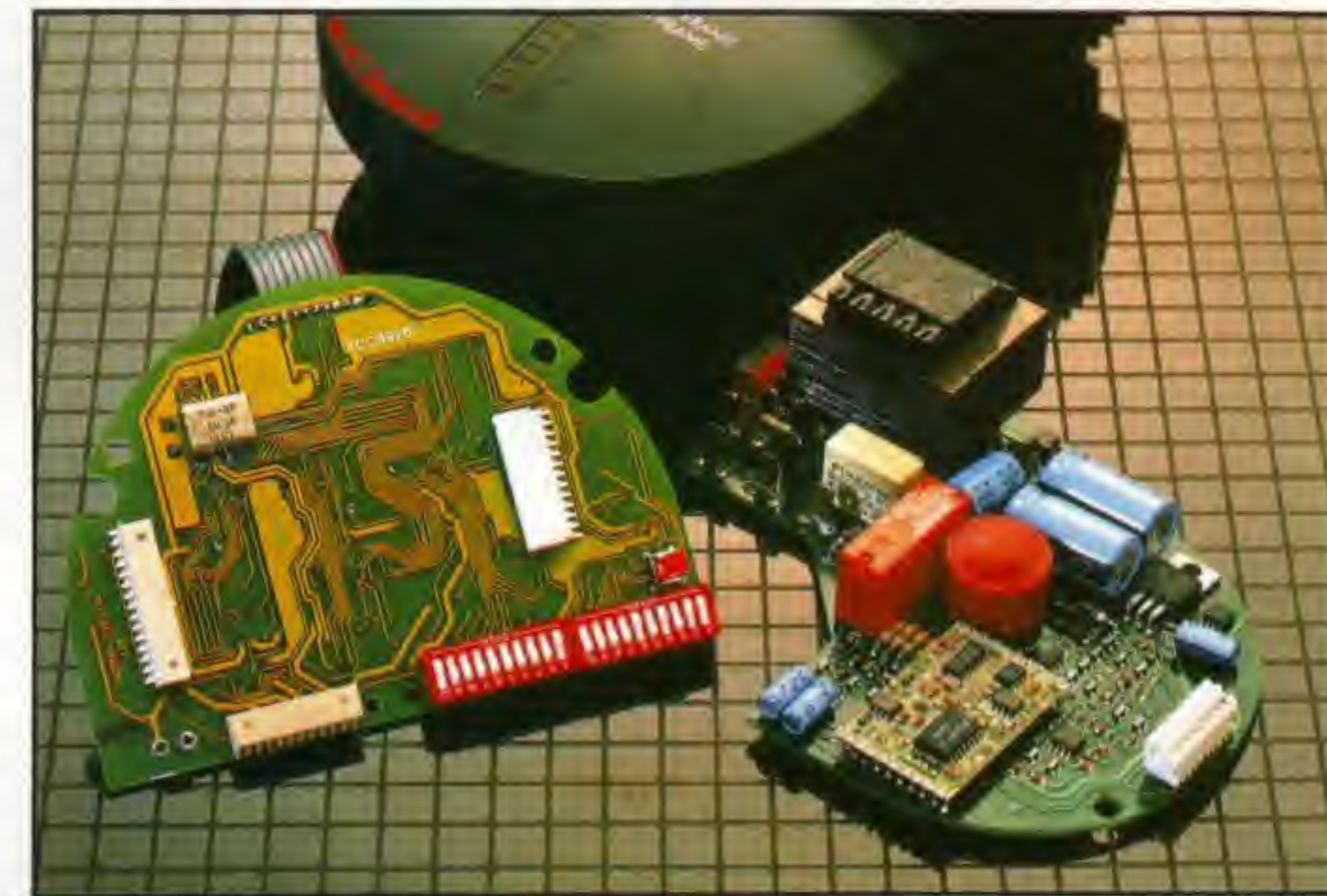
The theory behind the system has been around for several years, any amateur electronics enthusiast will tell you that. Mains Data Transmission therefore, is not a new idea - several commercial units are already using the system to remotely control things such as Hi- Fis. The system involves encoding data onto an FM carrier, launching it onto the 240V ring main, then picking up and decoding it elsewhere. Is it just a fancy modem?

The problem of transmitting computer data though is a little more complex. Just for starters, computer data comes in serial and parallel forms. Then, there is always the possibility of someone in the same office block receiving and decoding your data! The signal goes everywhere the ring goes - up to an effective maximum range of 100M between stations.

There is nothing - theoretically - stopping you from boosting the signal at preset points in the ring. This entails adding a slave computer to echo everything it receives. This only works for serial data, incidentally. Lastly, there is the problem of mains "spikes" causing corruption of data. Datalink solves these problems almost completely and does so in a typically British way: with elegant overkill.

So, just how do you stop the rest of the office picking up every signal you broadcast? Simple enough, you code the signal with a unique address. This is fine but what if you have more than one pair of Datalinks trying to talk to other devices on the same line? Again, simple (in theory) the information is sent in "packets."

The final solution is to send packets (short bursts) of data each with its own destination address. Each Trans-



mitter monitors how busy (or "dirty") the line is and adjusts its packet size accordingly. This reduces the risk of data corruption or loss. Receivers, on the other hand, look for packets which are addressed to them. Addresses are user programmable and can be up to 18 bits long - which means there are 4,194,304 possible addresses. The upshot of this is, data security is extremely high and the next office are extremely unlikely to clash with you. Before you get any ideas about downloading the code anyway, the data is encrypted with the same address key.

All this happens thousands of times every second. Computer boffins refer to such systems as packet switched networks. Those of you who are really alert, or at least have an understanding of hardware, will have realised another problem. No matter what sort of data is being transmitted there are more than just data lines used to perform the

physical electronic link.

Think about RS232, this has many different configurations from three wires upwards. The same goes for Centronics which uses eight data lines plus handshaking. The Datalink monitors every line and ensures both devices receive the correct handshake signals.

This question of handshaking brings about another point - serial handshaking. Serial devices are wired as either Data Terminal Equipment or Data Communications Equipment. The configuration varies from device to device so how does Datalink manage? Like everything else, a special serial connector is supplied with the machine. This has the unique ability to change its electronic appearance at the flick of a switch. Conventional doppelganger plugs have used wire links, this system - like the Datalink - is far neater and easier to use.

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Besides containing some of the best PD 'Breakout' style games the highlight of this disk is a brand new Shareware release. The Breakout Construction Set has the best design features we have seen in a game of this type. Easy to use, fast to play and beautifully presented. Highly Recommended.

*** JUMPDISK * JUMPDISK * JUMPDISK * JUMPDISK ***



WE'RE PACKED

Contents of this issue filled two disks to start. We crunched, we packed, we tightened, we honed. And now it fits on one disk. You'll find more usable material on this disk than you thought possible.

The theme of the October issue of JUMPDISK is Program/Text File/IFF Picture compression using the very latest techniques. Other programs include **CRAPS**: Superlative version of the famous gambling game with animation and digitized sounds. **SRT**: Replace standard requester messages with your own. **SEAHAVEN DEMO**: Playable demo of excellent Solitaire Game. **VTOT**: Collection of tools and effects that are useful when recording Amiga output onto Video Tape. **POPPALETTE**: Recolour the screen on the fly. **CHARPIC**: Transforms IFF art files to ASCII-rendered graphics, the effect is amazing. **PLUS**: Maze City – Unusual Maze Game, Capture – Challenging board game, Tutorials, News and much, much more. All for just £8.50 inc. (£6.99 Members)

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This 3 disk set includes the finest PD programs we could find for design work. If it's CAD, FRACTALS or MANDELBROT you are interested in this pack is just what you are looking for. Highly Recommended. **STOP PRESS**: Now includes Fish 215 & TBAG 26 Mandelbrot/Fractal programs.

**** NEW ... NEW ... MEDICAL SPECIAL PT I ** £5.99 (£5.49 Members)**

Two disks featuring a CT Scanner, the Heart in 3D plus a presentation explaining the effect smoking has on the heart. Beautifully presented with excellent graphics.

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This disk features the very latest methods of detecting and removing the latest Amiga Virus. Full instructions on disk + "Icon Voucher" allowing you to update for only £1.00 when V2.0 is released.

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VDUs

***Is your monitor a health hazard?
Nancy Picard reports.***

Val Pugh faced a dilemma. As an employee of TSB Bank for several six years, she gradually worked her way up in the system so that she became a technical assistant, a position which involved many hours of on-screen computer use. When she became pregnant, she also became concerned that the emissions from the screen could possibly harm her child. So, she refused to work on the computer, typing reports for people and other duties associated with her job. Instead, she requested - and received - work that allowed her to stay away from computer monitors.

'Some of my co-workers, especially the men, acted a bit funny. There were a few odd remarks, but as I was not happy using the terminal and refused to do the work, there was really nothing they

could say,' she recalled. Val was lucky - she was treated fairly. A case is currently pending involving 51-year-old Urmilla Joshi, a data preparation operator, who quit her job with British Airways claiming premature retirement due to ill health. According to The Financial Times, the legal action could prove a test case of the application of health and safety legislations to the use of visual display units (VDUs).

They have yet to force such legislation in Sweden, where there are already strict guidelines for PC vendors of video displays for which no x-rays are allowed and the electrostatic potential must be very close to zero. In addition, the requirements for low frequency electromagnetic fields and sound emissions are also given. Big deal, right?

Wrong. At the back of your monitor,

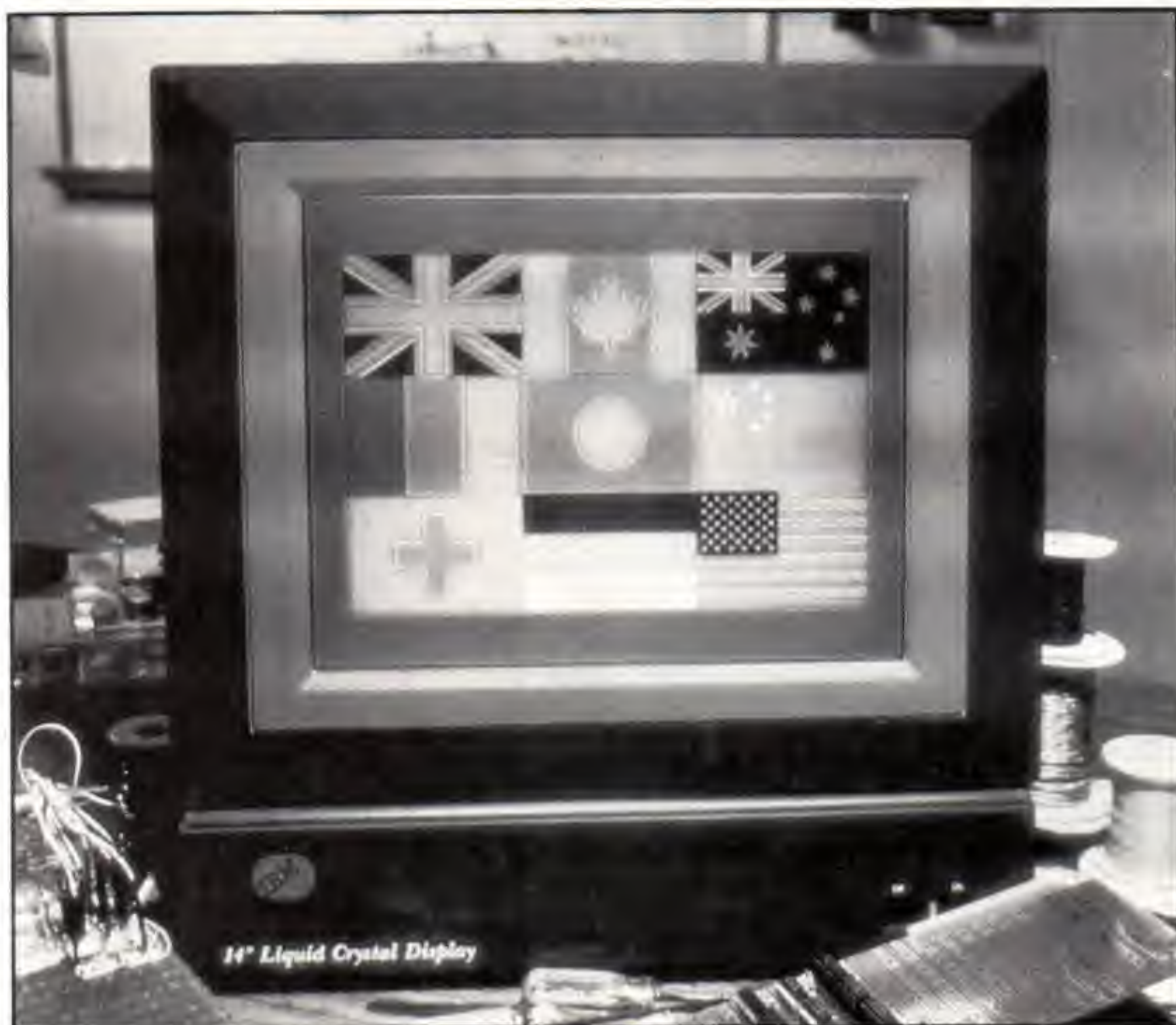
the cathode ray tube fires electrons at a phosphor screen - the result is what appears on your monitor. However, the 'bullets,' which are actually electrons travelling approximately 186,000 miles per second, do not stop at the screen. Instead, they bombard your face and upper chest. There's also evidence that the tube may produce more radiation from the top or front, affecting people not using the terminal.

The tube also produces ultraviolet, x- and radio-frequency waves. Whether or not the amount of radiation produced is harmful has yet to be decisively proven. According to a report published on VDTs by the International Research Association for Newspaper Technology (IFRA), in modern terminals with solid-state constructed circuitry, no x-ray radiation is emitted. However, how many of you are knowledgeable about your monitor or terminal circuitry? Thinking of moving to Sweden yet? It gets better.

Even if direct exposure to some form of radiation is minimized, the dust and dirt that collects on your screen is a result of the electromagnetic static of the electrons, and has been the proven cause of sinus problems, eye infections, and even acne. Flickering, distortion and other defects, including hard to read character fonts, are all causes of fatigue and irritation prone to affecting VDU operators. Does anyone have the name of a good travel agency?



***"LCD MONITORS
Another solution to this
radiation monitor
problem is to trade in
your cathode tube for
an LCD display. Philips
produce an LCD
monitor for PCs and
compatibles, which is
available as MDA/HGC
or CGA (699). The
company plans to
introduce an RGB
converter soon so that
the LCD can be linked
directly into
conventional EGA
ports. A full colour LCD
model with built in VGA
capability will be
released in 1990."***



IBM have joined with Toshiba Corporation to produce a 14.26 inch screen based on active matrix technology. Display Technologies, as the venture is called, will start making 10 inch colour LCDs in April 1991 and move on to the 14 inch size as the production process is smoothed out. The displays switch at 60 frames per second, ideal for Toshiba's flat panel TVs.

COMMERCIAL PRODUCTS AVAILABLE

But before you move to Sweden, or quit your job, there are alternatives. Taxan launched what it claims to be the first UK low radiation monitors, the Supervision 780LR (629) and the Multivision 770 Plus LR (699), designed specifically to achieve low electrostatic and electromagnetic fields. According to the company, it uses a special conductive treatment applied to the CRT surface of its monitors to keep emission values within the maximum recommended by the Swedish National Council of Metrology and Testing, in co-operation with the National Board of Occupational Safety and Health, and the National Institute of Radiation Protection.

Following healthy sales in Sweden (nothing like a good consumer scare to promote profits), Eizo has launched the Z-series of 14in paper white and colour monitors. They claim that their specially designed circuitry counters magnetic screen emitted radiation. The range starts with a mono MDA screen (230), and has several types of monitors, with the highest priced being the multi-scanning VGA (710).

Several other companies are also offering monitors: Hitachi has an Auto 480 LMF model (525); Salora produce a

range of mono and colour versions from the 41BJ 14 to the 445G21 (prices POA); and Expert Graphics have launched the GS10, the most expensive of them all (2,450).

LCD MONITORS

Another solution to this radiation monitor problem is to trade in your cathode tube for an LCD display. Philips produce an LCD monitor for PCs and compatibles, which is available as MDA/HGC or CGA (699). The company plans to introduce an RGB converter soon so that the LCD can be linked directly into conventional EGA ports. A full colour LCD model with built in VGA capability will be released in 1990.

An LCD consists of a film of liquid crystal, an organic material, between two polarising filters. There is a reflector at the bottom of the monitor and a protective sheet at the top. When the electric field is switched on, it twists molecules so that they either reflect or transmit light that falls on them, thus creating an image. Recently, new forms of liquid crystal have taken the name, 'spertwist enmatic,' and backlighting has been added to increase the contrast ratio.

LCDs are popular not only because the power requirements are low, but

also because a similar aspect ration as with traditional monitors can now be achieved. Working with your LCD monitor is no longer like trying to do wordprocessing on a wristwatch whilst in a dark closet.

These monitors are not to be confused with filtering devices, which only serve to reduce glare and/or to enhance the contrast of the screen. Filters are like apirins - they may be less expensive, but they mask the true problem.

CONCLUSION

The prices of the monitors are not cheap, but they are at least a welcome alternative to the cathode tube. The office enviroment is strewn with hazards, from the chair on which you sit, to the angle of the monitor, to the office lighting, and even to the wretched coffee in the canteen. The introduction of healthy monitors into the UK is a step in the right direction, rather than a step out of the door of your company, or onto a plane bound for Sweden.

N.P.

Contact: Taxan (UK) Ltd., Tel:(0344) 484646; Eizo (UK) Ltd., Tel:(0483) 757118. Philips Electronics, Tel:(01) 6892166; Hitachi Sales Ltd, Tel:(01) 848 8787; Salora, Tel:(0358) 243011; Expert Graphics, Tel:(0707) 56662.

ProWrite 2.5

An established word processor is dusted off and improved to meet today's challenge: Peter Lee digs below the surface to uncover an old friend

Standing still in the computer business is, relatively speaking, like moving backwards; the competition is always snapping at your heels, and today's success quickly becomes as fresh as yesterday's news.

So there is little wonder that enhancements and upgrades are constantly being released. This is a two-edged sword for the company concerned - they need to keep up with the market, which is evolving all the time, but they risk alienating their original purchasers who gave them their initial success, and who may now feel they bought second best.

Search	
Find...	<input checked="" type="checkbox"/> F
Find Next	<input checked="" type="checkbox"/> N
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Go To...	<input checked="" type="checkbox"/> G

Hoping to steal a march on the opposition, New Horizons have once again upgraded their successful full-colour graphic wordprocessing package ProWrite with a number of meaty additions. The Texas company is also offering an inexpensive upgrade policy to keep original owners happy.

The program's first enhancements were covered in *AUI's* June '88 issue; but for the benefit of our newer readers, and in the interests of the thorough evaluation we strive to present, a full run-down of major features will be given. But first, the improvements over version 2:

IMPROVEMENTS

ProWrite now has the capability to print near letter quality text and pictures using one pass through the printer. This will only be of benefit to users whose printers support NLQ, but the drawback is that it will prevent them using the program's different typefaces for output.

Text entry and spelling check speed

have been increased - with most documents, a halving of the checking speed is recorded over version 2, especially for users accessing the 100,000 word dictionary from floppy. You may also spell check each word as you type it in (useful only if you have the dictionary in RAM or on a hard disk, or are a very slow typist!).

As far as typing speed is concerned, this is a major advance, considering you will generally be using graphic fonts on screen, which are notoriously slow to display.

Page sizes are now user adjustable, giving scope for such things as address labels or business cards to be designed and printed (when you may want to use the program's skip-over perforation option). The top and bottom page margins may now be turned off, allowing full pages to be used to display text or graphics.

Date and time can be inserted anywhere in the document, to be static - or automatically updated to the current date every time you re-open the document - and with any of the font or colour attributes you have in operation.

Improvements to the Tabs have been made; centered tab stops are available, which is useful for table headings, and formatting control has been included for files with line feeds after each line. Very handy this for stripping the paragraph information which seems to tag onto each line of files downloaded from bulletin boards.

There is now a sentence count for the document in the information requester, as well as the average word length and average sentence length for the document. This is not something one would use a lot, but perhaps some users may find it useful in terms of style correction - to help create short, sharp

Sort Order:	
<input checked="" type="radio"/> R to Z	<input type="button" value="OK"/>
<input type="radio"/> Z to R	<input type="button" value="Cancel"/>

Document	
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<input type="checkbox"/>	Edit Header
<input type="checkbox"/>	Edit Footer

<input type="checkbox"/>	Show Header
<input type="checkbox"/>	Show Footer
<input type="checkbox"/>	Title Page

<input type="checkbox"/>	Insert
<input type="checkbox"/>	Numbering Style...

<input type="checkbox"/>	Document Info...
<input type="checkbox"/>	Check Spelling...

snappy sentences.

Finally, cosmetic advances have been introduced to improve the overall appearance and feel of the program (which I thought was quite good to start with). However, the file requesters are tedious in the extreme, requiring the user to cycle through each mounted volume in turn rather than select a specific one from which to load files.

In addition, some menu command key equivalents have been changed, and these, together with other improvements, are detailed in a four-page addendum list currently being shipped with the existing ProWrite manual.

IN USE

ProWrite is a graphic wordprocessor, and consequently features two traits not found in the more commonplace text editors - the ability to include artwork on screen and within your document, and the choice of a number of font styles and sizes for your text.

I am happy that the features which initially attracted me to it have been retained - chief among which is a simplicity of control. The program requires Amigas with a minimum 512K of RAM and works in either high (interlaced) or medium resolution, and can import IFF screens, including HAM images. The trade off against selecting the more humane anti-flickering medium resolution is that your document will not be truly WYSIWYG, as text and illustrations are stretched vertically - but your eyes will thank you for it!

The program can only display eight colours on screen, so a compromise has been reached with regard to printing. After your graphic has been loaded

continued on page 32

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TEST DRIVE

continued from page 30

in, ProWrite converts the image the best way it can for accurate printing on a colour printer. This includes a user-definable amount of dithering to suit the work, and the option of a black and white translation of the image.

Once loaded, pictures can be cut, copied and pasted much like text, with the bonus of a re-size function. In use this sometimes led to uncomfortable results as pixels tended to create interference-like patterns once a graphic's ratio was altered.

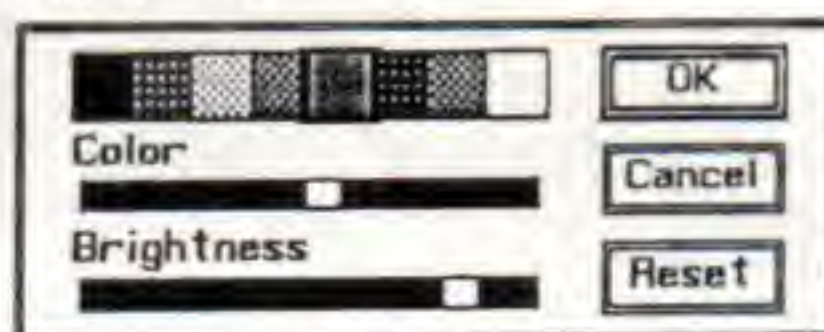
Text styles can be altered by loading in a different typeface from your current font directory. A pleasant enough array of styles comes with the program, but I had no trouble in loading in the many styles I routinely use, including some massive ones. Text attributes - colour, bold and italic styles - can be altered on existing text after it has been highlighted, or invoked for each new section of the document as and when needed.

The program incorporates all the functions of the standard text editor, and handles the more sophisticated aspects such as spell checking in a friendly and simple way.

Mail-merge is also accommodated, allowing the duplication and personalisation of a single document to many people, whose details (name and address) are held on a merge data file and incorporated at the time of printing.

The system files which accompany the programs on a separate disk include the by-now standard 1.3 Preference printers, which have done a lot to improve output quality and which I found worked extremely well with varied fonts and images. Black and white on my Epson 80 was crisp, and using my Okimate 20 printer produced excellent colours on text, but sometimes had me scuttling back to Deluxe Paint to alter some colours of an original art screen which were not translated well by ProWrite.

If you want a quick printout of your document, you can over-ride on-screen fonts and do a draft dump, which uses the printer's own typestyle and excludes graphics.



CONCLUSION

It is a major luxury I know, but I do find a need for two distinct type of word processor. I require a simple text editor for business, where I use Transcript, and something a little special for graphic printing (for invitations, signs and so on). I have to admit that I would not consider using ProWrite as my main

Edit

Cut X
Copy C
Paste V
Erase

Copy Format
Paste Format

Select All A

Show Ruler

work tool - I am something of a traditionalist in that respect - though I am sure it is capable of doing the job; but it will easily earn its keep as a simple-to-use and feature-packed graphic text utility. I liked the program when it - and I - was a little younger, and at least ProWrite, with continuing development and improvement, has improved with age...

P.L.

Upgrades - \$20 to all registered ProWrite 2.0 owners, and \$30 to all registered ProWrite 1 and 1.1 owners (add \$5 pp). Available from New Horizons Software Inc. PO Box 43167, Austin, Texas 78745, USA.

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AMIGA ART

APPLE

An excellent example of the stunning effect of blurring. This superb still life creates a highly realistic picture. It also displays beautiful shading. The benefits of blurring can be seen by comparing the actual apple with its accompanying leaf. The former has beautifully smooth edges and no visible pixels; in comparison the



leaf is starkly unshaded and shows a somewhat rough edge. Considering that Deluxe Paint III only allows 64 colours on screen at any one time, I guess that Andre ran out of available colours. The one problem with blurring is that it is expensive in colour usage. I personally think that the addition of the lower quality stark leaf detracts from the apple's soft beauty.

Carrie Beecroft examines how André Alexander, an Australian graphic artist, is setting new standards for Amiga artwork

Yes, I was fooled too. But this is not some late discovery of a long lost art treasure, although you could be excused for thinking such. Rather this is the latest in Amiga graphics brought to you courtesy of a highly talented Australian graphic artist called André Alexander. Oh, and yes, it is all done the computer, and it is pretty phenomenal.

Alexander is responsible for the graphic art set-up "Studio Evolution" which is based in Victoria, Australia. He has produced this fantastic Amiga artwork without resorting to mega-expensive equipment; all these graphics have been created by drawing directly onto the monitor screen with the mouse. No digitising equipment or graphics tablet were employed. The graphics are produced in both low and high resolution and can be run as a slideshow using Zuma TV Show, or can be loaded into Deluxe Paint III.

André informs us that he acquired his first Amiga only two years ago and already is producing work of this outstanding calibre. He now works with an A1000, A2000b and an A2500. His output devices consist of a Commodore MCS820 thermal colour printer, a Polaroid Palette System and a modem. He is hoping to add a digitiser and a framegrabber to his technical stable.

The examples we are publishing this month



RED RED WINE

This is an excellent example of shading. The same technique is used as described above, although in this still the detail is superb. The blurring method can be seen in the magnified shot.



LADY A

The majority of this picture has been created using individual strokes of the mouse. However, as can be seen from the hair, The blurring technique has been used to fill in background colour. This effect is used predominantly through Andre's work to create the highly realistic borders. Colour blending is used to prevent the pixel edges from being glaringly obvious and thus giving the game away as to the medium through which the pictures were created. Being complete with excellent blending and graphic detail, this sensitive still must be one of Andre's best.

show that with talent and your amazing Amiga coupled there is no end to what can be achieved.

André has mentioned that he is in the process of stringing some animations together. Judging from the quality of the stills, those animations will have to be seen to be believed. Check out future editions of AUI for a report.

André used Deluxe Paint III to create these stills. This works on a resolution mode where Photon Paint operates using HAM (Hold and Modify). Both packages allow a selection of colours from a palette of a total 4096 colours. However, in the Deluxe Paint III package, only 64 colours from the total palette may be on the screen at any one time. Mode, as many of you

will already know, is defined by the resolution and the amount of colours used.

André also is the lucky owner of a Polaroid Palette which allows him to produce photographs directly through the computer. Needless to say, the quality of these shots are outstanding.

My personal favourites being Lady A and the apple for their realistic image, superb shading and soft appearance. Thank you, André, for extending our view as to the ability of the amazing Amiga!

C.B.

For more details contact André Alexander at: Studio Evolution Pty.Ltd., 7 Vistaway Court, Donvale 3111, Victoria, Australia. Tel: Australia 03 842 5957.

CAR

What other than a Ferrari Testarossa! Andre has employed interlace mode for this one which doubles the vertical resolution by inputting in an extra line be-

tween the existing verticals. This makes the pixels half as thin vertically allowing smoother edges. Compare the bonnet slope to the wheels- the bonnet edge

is much smoother as it exploits the doubled vertical resolution. The wheels on the other hand rely on the horizontal resolution which remains unchanged.

Plainly speaking, this means that the bonnet edge is moving down in pixels which are half as wide as the wheel pixels; thus allowing for heightened clarity.



THE PERSONAL COMPUTER SHOW

The biggest consumer computer event of the year has just taken place at London's Earls Court Exhibition Centre. **AUI** sent a team to cover the multiple attractions of business, productivity and home computing displayed there. Anthony Mael, Carrie Beecroft, Simon Power and (on pages 73, 74, 75 and 76) Tony Horgan report.

Commodore again had an action packed stand at the PC Show where the star attractions were the Christmas bundles for the Amiga 500 and the Commodore C64. Based on the "Batman the Movie" game from the games market leaders Ocean, this is the first time in the history of leisure computing, says CBM, that a major game has been bundled with a computer and launched to the public at the same time. In the pack too comes the highly acclaimed Deluxe Paint II and the successful flight simulator F-16 Interceptor - both from Electronic Arts. For Arcade fans, Commodore have also included The New Zealand story from Ocean. This Batman pack will no doubt ensure that the Amiga 500 continues to enhance Commodore's leading position in the market. The Amiga 500 Batman Pack is priced at £399.00 and will be available by the time this magazine reaches you.

Commodore are also tripping the Light Fantastic with their new package for the C64. Together with the Commodore C64, the Light Fantastic pack includes a 1530 Dataset, a Cheetah 3-D light gun called The Defender, 3-D glas-

ses plus Time Traveller, Gangster and Army Days- three specially developed Mindscape games- Blaze Out from Ocean, Mike Read's Pop Quiz, & Batman the Caped Crusader, also from Ocean. Educationally the pack offers Pitman Typing Tutor, Music Package, Paint Package, and an Arcade Construction kit from Domark. The Light Fantastic offers an excellent product mix bringing exclusive software to the market and further expanding the everlasting appeal of the Commodore C64. Retailing at £149.99 for the pack, or £39.99 for the software alone, no doubt the Light Fantastic Pack will be the biggest selling 8-bit product this Christmas. Commodore have always made clear their commitment to the leisure industry, and also their concentration on the younger generation, at least in terms of the A500 and the C64. Both the new Christmas packs indicate that computing for the younger generation is still a priority, although with the addition of the creative and educational software it appears that Commodore is aiming at a more general family appeal. Shoot 'em up games are, after all, not included in most parental priorities.

Commodore therefore hopes to control the games market, but what of the other computer areas such as education and business? Here it is recognised that the hardware that makes the Amiga the best games machine in the world is the platform which also makes it an excellent machine for other purposes. There, however, it is the A2000 that really comes into its element.

At the PC Show, the three most exciting developments in the Commodore field were respectively research, education and business centred. The most dramatic development involving the Amiga was the invention of a 4-D ultra-sound heart scanner which uses time as the fourth dimension in order to create an animated image of the heart for medical diagnostics. The high resolution graphics and other advantages of the Amiga 2000 make it the ideal vehicle for this exciting and important research. Harold Wilson, the guy responsible for the scanners creation, is a medical engineer from Imperial College, London (and no, he never was Prime Minister) was at the Show to give me a run through of the operating principles. Essentially, these are quite straight for-



ward and depend on the high resolution graphics, open access system, multitasking and multiprocessing. There are many important benefits of this newly developed scanner, which incidentally won the 1989 National Westminster Bank/ BP Award for Technology despite the fact that the project had only been running for one year. Present ultra-sound scanners run on 2 dimensional scans which rely on cross sections of the heart. The new Amiga equipment can take a 4-D animated scan of the heart, making it easier to detect abnormalities in the heart structure and in blood flow. The scanner could also be adapted for brain scanning with the addition of X-Ray equipment, and may also prove useful in the detection of cancer cells and related follow up treatments. One final point; the Amiga scanner, including software, can sell for around £25,000 compared to £80,000 for present scanning equipment.

Another interesting development on the Commodore stand was the Training and Presentation system produced by Computerised Training Systems. This interactive, integrated system puts the presenter in control of information technology designed to achieve maximum effectiveness. Audio, video, live sound and pictures, slides and overheads are all fed into the computer and controlled by the presenter by moving the mouse. The Amiga was the ideal computing tool because of the high quality graphics, large memory capability, open access system, multiprocessing capability, and of course, economy. A program for children has also been developed which involves slides and an accompanying voice.

The system is very simple to operate and thus allows trainers to concentrate on their training rather than production. The system can be extended to a comprehensive student system if required, allowing students to develop in depth knowledge and skills at their own pace.

On the business front the Small Business Manager is a stand alone, easy-to-use software system comprising 5 essential business packages. The Options package allows you to enter your company details, VAT rate and

other details particular to your hardware configuration. The Invoices package allows access to customer/ delivery database and produces invoices, copy notes and credit notes. The Stockbook produces lists of stock and is informed from the invoices package of any items bought and sold. The Statements package produces a full customer ledger and statements. The VATbook stores inputs/outputs information. This Small Business Manager requires an Amiga 500 as the minimum system and at £99.00 is financially accessible to all small businesses.

Causing quite a sensation on the Commodore PC was a famous MSDos package on a large and terrifically clear monitor, showing two A4 pages at the same time, and proudly bearing a Commodore badge. Aldus Pagemaker 3, the Desktop publishing package, together with the new Aiden 21 inch high resolution monitor, gave some impressive results. However, at £2388 for the monitor, it was not one for the uncommitted.

The Amiga graphics were of their usual outstanding quality, with demonstrations of DigiPaint being even more impressive on the high res. monitors.

With the most impressive stand at the show, including a private theatre where you could see everything on a constant programme, including The Bitmap Brothers of Xenon fame, it was altogether an excellent showing for Commodore. In terms of exciting new developments, the general opinion was that they had left their competitors behind, their massive two floor stand emphasizing their leadership of a wide area of the hardware market. CB

PC SHOW ROUND UP...

Simon Power whizzes round the packed stands

The 1989 PC Show is said to have been the largest one yet in both the number of exhibitors and the number of visitors attending. With so many trade stands and so many new products on show it was practically impossible to have a good look at everything. I'm sure I must have missed many an interesting gadget or game being shown off.

The Central hall contained most of the large companies including the Commodore stand. Commodore launched their "Class of the 90's" educational package at the show which includes among other things, an Amiga 500, De-

luxe Paint II and a copy of this magazine. To help schools in their mastering of the package Commodore have invested 500,000 in an educational team who will tour the school offering help and advice.

Granada Microcare who officially maintain all Commodore computers on behalf of CBM were present at the show. Granada have recently been involved in Commodore's announcement that all its PCs sold from now on will carry a one year maintenance free warranty.

Kuma Computers Ltd. had a variety of titles on show at the stand covering topics on the PC and Amiga. A special

promotion was being held for their new K-Roget disk based Thesaurus. A review of which will shortly appear in AUI. A special price of 29.95 was being offered, usually the thesaurus costs £49.95.

The Computer Users Book Club which offers members a 25% discount on all titles were at the show displaying a variety of their new books. Membership to this club is free, and all books are dispatched first class as soon as the order is received.

The Business hall was where one could find the best professional software and hardware available. Marconi Electronic Devices launched their KB35 trackerball at the show. Available for the Amiga and PC the trackerball will assist in educational programs as well as intricate graphic design work. Priced at around £150, the trackerball should soon be appearing in many offices and schools around the country.

Wordperfect UK who recently changed their name (to Wordperfect!) had Wordperfect for the Amiga and PC. Wordperfect were running regular style presentations showing Data perfect, their Wordperfect office and PlanPerfect for the PC.

John Wiley and Sons Ltd has a range of books covering various Amiga topics. Wiley's books are known for the practical way in which they deal with complicated subject matter.

Equinox Business Systems had their business software being put through its paces. The Equinox Organiser which is said by Equinox to have a wider scope than most organiser packages was also being shown, and is available for the PC.

The Bank of Scotland and the Royal Bank of Scotland both had their home banking units on display. The Home and Office Banking Service (HOBS), which belongs to the Bank of Scotland, functions with most PCs and has the ability to instruct payment to third parties and facilities to transfer funds between accounts on a same day basis. The Royal Bank of Scotland launched their unit two years ago. Named Royline, it offers the same facilities as the Bank of Scotland but claims to be growing at a faster rate than any of the top four banks.

PET computer services, who are based in Singapore, and have absolutely nothing to do with the PET, were at the show wishing to meet distributors, importers and buyers who might be interested in purchasing their 'Sherry' range of DTP packages. Why they are called 'PET' and not 'SHERRY', nobody seems to know!

The Leisure Hall contained most of the big names in entertainment. Ocean made good use of their allocated space by erecting a large video screen to

promote their new releases. Batman was without the game that people came to see, and Ocean had supplied two 1950s Cadillacs to set the scene.

Domark, whose latest release Trivial Pursuit (featured on page 40 of this AUI) looks set to make a big hit with the computer board game players. Fantavision, Broderbund's animation package, also attracted a large crowd around the monitor running in its dome. Fantavision has recently been upgraded for the Amiga.

CDS had a new striptease game at the Show, as well as their latest chess program - Colossus Chess X - CDS call this the 'Ultimate Chess Program' - They will probably say the same for XI... Accolade were also present, along with Rainbow Arts, Gremlin Graphics, UbiSoft, Virgin, Activision, Titus and U.S. Gold to name but a few.

Various oddities could be noted at the Show including the Red Star stand. We know Red Star offer a delivery service using the rail network, but as for their reason for being at the PC Show, nobody could tell. The Encyclopaedia Britannica also had a stand at the Show. Maybe a computer version was available? Maybe a computer version was planned? Alas, no. The Encyclopaedia Britannica will in the mean time stay in its paper form. Just another of the mysteries that the huge show failed to solve.

S.P.

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Trivial Pursuit

Domark

The computer version of Trivial Pursuit has been around for some time but, it has only recently been released for the Amiga user.

For those of you unfamiliar with the game its basic principle is that of a quiz. Six categories of questions are available, History, Science, Entertainment, Geography, Art & Literature and Sport. Each question has an assigned colour and the board consists of a wheel made up of these coloured squares. There are six spokes on the wheel and at the end of each of these is a special question square, one for each question group. Each player, or team, uses a token which can hold six triangles. On answering the questions correctly, on the special square, the designated coloured triangle is placed in the token. A dice is used to move around the board with all the tokens starting from the hub of the wheel. Grey squares are situated around the wheel and these signify another throw of the dice. To win the game a player must collect all six triangles and then return to the hub of the wheel and answer a question selected by the other players.

The computer version of the game consists of all these elements plus one or two available by use of a computer. The game includes a cartoon type character known as TP. TP asks the questions and as he does not use a human voice they are also displayed in words on the screen. There is no mechanism by which the answer to the question can be checked and it is therefore up to your opponents to enter whether or not the answer is correct. TP is also used to select the number of squares to be moved by the throwing of a dart at the board, which shows the



numbers one to six. TP can be switched off, which to my mind is a better way to play the game.

An interesting addition is the analysis which can be displayed on how each player is handling the questions. This can then be used at the end of the game for your opponents to select a question. The questions themselves are displayed in a 'question room' which contains a grandfather clock showing the length of time that the current game has been going on. A timer element to the game can also be selected and the 'question room' has a candle which burns down as the time for the question passes. The main advantage over the board game concerns the questions for the computer version, which makes use of both sound and picture questions. The game can be played alone, but of course it is up to the player to enter whether the answer is correct. On completion of the game a score will be provided based on your performance.

This version is obviously a conversion from the earlier releases and unfortunately, this is its weak point. The program makes no use of the the Amiga's advanced sound features. The music questions are a bit plink-plonk, it is a pity digitised sounds were not utilised. The graphics are improved from the C64 version and this makes for better picture questions. If you are a Trivial Pursuit nut, like me, this game will be for you and will be welcomed in the Amiga format.

L.K.



PRICE: £19.95

3D POOL

Firebird

It is often said that while computer technology advances at speed, the games to run on them are no more than re-workings of their forerunners. Xenon II takes great advantages of the Amiga's hardware with superb results, but the basic dodge and shoot gameplay owes a lot to Space Invaders. 3D Pool on the other hand, uses that technology to create something that would have not been possible just a few years back.

3D Pool is easily the most realistic pool sim yet. For the first time you see everything through your own eyes, rather than an overhead camera. Your opponent and your cue are both invisible. So how do you aim with an invisible cue? That 3D is not just a gimmick. Shots are lined up by rotating the table around the cue-ball. The ball is always hit directly into the screen (although in reality it goes up the screen), so the view you see on-screen is just as you would see in a real game. Without any markers to help line up the shot, accuracy can be a problem, although taking the cursor straight up from the centre of the cue-ball can help.

Of course all the calculations of a standard pool sim, combined with the 3D maths, make the game a touch slower than its 2D counterparts. All the same, the speed is up to the current solid 3D standard, and the frame-refresh rate is no problem. What can string a game out is the time a computer opponent takes to ponder his shots. Things move a little faster if you opt to play against a friend. When you're bored with playing a normal game, you could select the



Take your cue...

Firebird chose UK pool rules for their simulation, but there are many different varieties of the game played worldwide. The US game is all about scoring points, played not with the now-common reds and yellows of UK pool, but numbered spots and stripes. The French allocate three pockets along one side to each player, into which they can pot any ball on the table, bar the black and white. For a really weird game, why not track down a pub with a six-sided rotating table?

"trick play" mode. This presents you with a series of set-ups, demanding you pot all the yellow balls without fouling. You can also set up some of your own trick shots.

I would have liked the option to play with an alternative shot line-up system, but other than that and the slight problem with slow opponents, I can't fault 3D Pool's execution. The idea is excellent, and it works extremely well. With only Steve Davis World Snooker as competition, it's well worth a look.

T.H.



Graphics: 8 Sound: 5 Playability: 8
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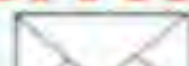
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Amiga Answers

*Yuri Large tracks down the tips
that keep you on top!*

Dear AUI,

I purchased an A500 machine just over a year ago, with the intention of expansion over a period of time.

I would be grateful for any comments or views on the following.

The first stage, about now, is to purchase the Datel external twin drive, which I understand is a pretty good buy.

However, within the next 12 months or so I hope to get a hard disk drive.

The A590 20Mb drive has been released and retails at around £399, which is just about in my price range. It has received rave reviews from many sources and seems a strong competitor for my final choice. However, AUI recently reviewed the Spirit HDA506 Sub System + Hard Drive and most impressions seemed favourable. I feel much of the favour was due though to the expected retail price of about £600 for the A590. Opinions? I am also considering the purchase of a Star LC-10 colour printer, again due to being well received by those "in the know". I would be interested to know of the relevant merits and demerits of others in the same price range.

Looking further ahead, I wish to take up music as a serious hobby on the Amiga. I understand a good overall package is Music X, AMAS, the Cheetah MK5II and the Casio CSMI MIDI sound expander. Opinions (and warnings!) again please.

Also, I have a Casiotone 1000P electronic keyboard which I bought in 1984. It has four "jack" sockets at the back, one labelled "LINE OUT". Is it possible to modify this for use as a MIDI keyboard? Two final problems.

I am concerned, as a relative newcomer to computers, about the introduction of Workbench 1.3. Will 1.3 software work on my 1.2 machine, or will I be forced to upgrade? Finally, and probably most basic of all, what exactly is IFF? I've never come across an understandable explanation. As a suggestion, perhaps a page of the most common examples of "computerese" printed, say, every six months would be very helpful to new Amiga own-

ers like myself who have had little previous computer experience.

As previously mentioned, I would be grateful for any comments or views from yourselves and other AUI readers who can point me in the right direction, and would hope to be in a position to return the favour in the future.

Many thanks.

David C Wright, Tyne & Wear

Dear David,

The Datel dual floppy drive system is indeed a very good buy. If you are looking for a hard drive anyway, it may be as well to consider if you really need three floppy drives on your system. Don't forget that each drive present takes up valuable memory. In this case it may be a better idea to go for just a single floppy drive instead.

With regard to the two hard drives you have mentioned, I think your comment is probably right. A lot of people were rather shocked by the bargain price of the A590. To compare the two, I would say that for the ambitious Amiga user the ability to easily add more RAM to the A590 is a great boon. On the other hand the Spirit system does allow you to attach a very large hard drive directly to your system without much fuss. Don't forget that the A590 only comes with an 80 millisecond access time, 20 Mb hard drive. This drive is quite slow and small in hard drive terms, so it's worth considering your speed and size requirements before making a final decision. So, there are the usual pro's and con's for each system.

My overall opinion would be that at the present time the A590 is probably the better option. Recently I have heard that ASAP are to bring out a new version of their AmDrive, which will have exactly the same specification as the A590, but with either a 30 Mb or 50 Mb hard drive. It should be worth looking out for, as apparently the 30Mb version will retail for the same price as the A590.

The Star LC10 Colour printer is an excellent buy for the home Amiga user

that not only wants to print the odd letter or two, but also wants to output some of the brilliant colour graphics that the Amiga is capable of. Competition for the Star is all but non-existent, especially at its price of roughly £250. The only other printer worth a mention is the OkiMate 20, which outputs almost magazine quality colour copy. However, the Oki is very, very slow and cannot really be used to print letters as its text output is very poor. Also, the Oki is very expensive to run as it requires special paper and ribbons. Therefore, I would have no hesitation in recommending the Star.

Music-X has caused a near revolution in the music world - so any MIDI system built around it should be excellent anyway. Your choice of keyboard, synth unit and sampler are sound (excuse the pun) as well. However, your Casiotone 1000P keyboard will probably not be modifiable to use with this system, unless you are an electronics genius. You will probably save time and money by selling it to finance the other equipment.

All properly written software for the Amiga should run under both 1.2 and 1.3. Of course there are exceptions to the rule, but these are in most cases of the games persuasion. In fact, I cannot think of a single piece of applications software that will not run under both! At this point, it is worth pointing out that the differences between 1.2 and 1.3 are fairly superficial, and I suspect that there will be much greater problems once 1.4 arrives...

IFF stands for the Interchangeable File Format. At the time when the Amiga was first being developed, a software house called Electronic Arts, who were of course responsible for Deluxe Paint, were asked to work on standard file formats for storing graphics, sounds, scores, documents and various other types of data.

A file format is used by programmers so that they can access information about the data in a file in order to use it properly. For example, with an Amiga graphics file you need to know the palette used to create it before loading it, as otherwise all the colours will be wrong spoiling the effect its creator would have wanted. By using a standard file format that includes data about things such as the palette this type of problem can be avoided. So, IFF just refers to the set of file formats used for different types of data on the Amiga. The main advantages of IFF are that data can be taken from one program to another without any need for a file conversion process.

Dear AUI,

I have an Amiga 500 computer, with which I am very happy! However, I have a query for you. I have recently purchased a new program - DigiView Gold, and I am having problems with it.

My monitor is a Commodore 1084 and I have a black and white Sony security video camera.

continued on page 46

continued from page 45

When I operate the camera with the monitor on CVBS - but without the computer - I receive a perfectly stable, clear picture.

However, as soon as I turn on my computer, the picture becomes out of sync. Hence I cannot simultaneously operate the computer and focus my camera to digitize on a new picture.

Several friends of mine (all with the same computers and monitors as mine), have reported the same problem; the procedure we have to use in order to digitize any new picture is as follows: disconnect the computer output to the monitor cable and switch the monitor to CVBS, adjust and focus the camera, disconnect the camera cable from the monitor and hook it up to the DigiView hardware, switch back to RGB and connect the computer cable to the monitor.

Hence we have to digitize "blindly", relying on our previous set-up with the camera.

However, another friend of mine has an older model of the Commodore monitor - I believe it is a "1702" - and this operates normally, i.e. as the DigiView manual states that it should! I wonder if there is any modification that should be done to our 1084 monitors? I would be very grateful if you could offer some advice. Thank you.

I receive a monthly copy of your magazine and I find it most enjoyable reading and extremely helpful. Keep up the good work!

Yours sincerely,
Yousef Suliman, Kuwait

Dear Yousef,

After quite a bout of research, I have been unable to uncover a hardware modification that will sort out your problem. However, if anyone out there does have a solution let me know, and I will pass it on.

In the mean time, one solution would be to buy a cheap, composite video monitor for use when focusing your camera. And, as this would be a totally separate monitor all together, it would not interfere with the output on your 1084. Phillips make such a monitor, and it retails for about 100 pounds when brand new. I would advise that you visit a computer auction before buying new if possible, as these items are usually in abundance at such events.

Dear AUI,

I own an Amiga A500 and have had it now for about half a year. I have a number of questions that I would very much like to have answered.

Firstly, I have recently started to learn C, but have not yet purchased a compiler and would like your advice. I have a budget limit of about £80, but would very much like one cheaper. Do you know of one and where might I be able to purchase it? I am also thinking of expanding the

peripherals of my Amiga and am not sure what to purchase first. Have you any advice on what might be best? Thinking into my future now, I hope to continue in computers. First, what "A" levels would you advise on and secondly, would you say there are more computer job opportunities in places like the USA or Australia? Thank you for your attention.

Yours sincerely,
J Douse, Wiltshire

Dear Mr Douse,

The Amiga C market is dominated by two major players, namely Manx and Lat-tice. Both produce excellent C compilers, which include all sorts of bells and whistles, however they both retail for over 150 pounds. This puts them well outside most peoples' budget! As you can imagine there is a huge gap in the market.

Your best bet at present bearing your budget in mind, will probably be the public domain. Try...

I personally have no formal computer qualifications, apart from "O" level wood-work that is, so I'm not really qualified to comment! In my opinion though Computer Science, Mathematics and Physics are probably the most useful subjects to study at "A" level.

There may well be more job opportunities in other countries, but the job market in the UK is crying out for computer personnel so why bother?

Dear AUI,

I have recently purchased an Amiga 500, monitor and Star LC-10 colour printer. I keep being asked to design letter-heads, but am having problems finding a program which will cope with long letter-heads. My program Deluxe Print hasn't the room, and Kindwords v2.0 has problems aligning different fonts on the right hand side of the page. Do I need a page-setting program, and if so, which one? I bought my copy of Superbase Personal one day before I read your review. I agree it is an excellent program, but I am having problems printing records. If I use the set printer option, it prints the fields first and then the record, but splits words between lines making it look nonsense. If I use screen dump, it prints the screen in a readable format, but if I scroll it prints the last part of the first page again. The only way I can stop the printer when scanning through records is to close the file.

Your comments (in plain English please!) would be appreciated.

Yours sincerely,
Miranda Lovell, Lincolnshire

Dear Miranda,

If you wanted to design a long letter-head using Deluxe Print, you could use the poster option rather than the letterhead option. This would then allow you to use the whole page if you wanted! However, I will admit that Deluxe Print is not the

world's most flexible program. A DTP program may well be worth considering, although in my opinion you will probably have to spend in the region of 150 pounds before you get better results than you can already achieve with Deluxe Print. My recommendation would be Pagestream, which despite all its warts is still a very powerful program.

In order to produce customised output from Superbase Personal you will need to use the Query process. This allows full manipulation of your data, from selecting the particular fields to be printed, to asking for a count of the items printed. This is covered in some detail in the manual, I hope this pointer gets you on the right road.

Dear AUI,

I am a programmer currently doing a computer course at Tech and have started to learn Assembly and C. However, learning these on one's own does take up time.

I would also like to express my views on piracy. Firstly, prices of software, and games in particular, are over expensive and this is why there is so much piracy. However, it's not so much the software houses' fault, but more that of the high street shops and mail order businesses that sell them. A possible solution for games would be when a game has been out for a couple of months to put the price down. I know that this works because I know a shop that does it, but for non-games software. What about an English-based shareware group? While I can see that it is necessary for people to write about their problems, I would also like to see more people write in with their views, as I am sure more Amigans would enjoy reading and answering them.

I would also like to comment on your magazine. It has a very good and varied content, so keep up the good work.

Anonymous, Surrey

Dear Anonymous,

Firstly could I just say that we do prefer people to own up to their letters! With regard to your ideas on piracy, I am sure that you are right about reducing the prices to reduce the copying. A few of the software houses are taking up this idea already, for example Klassix who have just released a few old games at less than half price. However, I must lay the blame for the prices in the right place - all the prices of software are dictated by the software houses that release them and not the shop that sells them.

The UK Amiga User Group and ICPUG already run PD/Shareware libraries for the Amiga, however an increased awareness of these would be needed for them to become useful.

Finally, I could not agree with you more, we would love to see more comments and views from all you readers out there.

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K-Roget Thesaurus

K-Roget is a computerised version of Longmans Pocket Roget Thesaurus. It has been released by Kuma Computers Ltd., and the Amiga implementation is by Phil Reynolds who also did Kuma's K-Gadget. K-Roget is available for PC compatibles (PC DOS and GEM forms), and now the Amiga version has arrived. It is supplied on two disks and needs either a twin-drive or a machine fitted with a hard disk.

A thesaurus is a dictionary of synonyms in the form of words, phrases and expressions which are used by writers, secretaries and perhaps even diligent youngsters for their homework. We use them at *AUI* (believe it or not) so that we can avoid repeating the same words over and over again..... we 'try', 'attempt', 'make an effort', 'do our best', 'endeavour', 'aim' etc., to make the magazine readable as well as technically interesting!

There are two parts to a thesaurus: First of all there is a 'word-finder', which is essentially a list of all the words in the thesaurus together with references to the headings (heads) where related words and phrases can be found. Secondly there are the 'heads' themselves. A 'head' is a group of words, phrases and expressions which are tied together by some general idea..... under one of the heads which contain the word 'ice' we find words like refrigerator, cooler, fridge, icebox, cold-storage, freezer etc. Under another 'ice' heading words like hailstone, ice cap, iceberg and glacier are found.

The Pocket Longman Thesaurus used by K-Roget is up-to-date, slang is kept to a minimum, and obsolete, rare, over-specialized and narrowly technical words have been avoided. The result is that K-Roget is able to provide a broad, general, vocabulary of modern English. Even with the above restrictions there are still over 150,000 words and phrases available!

K-Roget presents the user with a single fixed size window occupying just over half of the WorkBench display. In the bottom left is the string gadget used to identify the current word and above that is a selector box which provides the



word lists.

The program is easy to use... you type a word, hit return and the selector box (providing K-Roget can find the word) displays a header containing the word. Usually words have more than one head reference and the purpose of the 'reference' scroll bar (top right hand of the display) is to let you switch between any of the number of head references which K-Roget might find. Each head reference will have one or more sections and you move between these using another scroll bar. As you type words, pick new selections via a 'Pick' gadget, or mark particular items using the 'Note' facility K-Roget keeps a 'history' record. By clicking on the appropriate gadget you can get a display of the paths you've been following, so it is quite easy to back-track. A head scroll bar is also provided to allow you to look at head entries directly although most of the time it is doubtful whether this random examination of head entries would be of any real interest!

K-Roget can move rapidly between both header references and the section references, so this is the area where the program would score over a book ver-

sion. The K-Roget display itself is quite plain but it is functional and does its job adequately.

K-Roget also includes a phonetic spelling checker which checks words typed in as they sound rather than as they should be spelt and offers likely correct alternatives. Usually the results are O.K., but obviously it isn't fool-proof... typing THRU did not offer the word THROUGH as an alternative, but typing FOTOGRAF did produce PHOTOGRAPH. Neither the spelling check facilities nor the thesaurus itself have links with the outside world so it is purely a reference program and you cannot for instance export pseudonyms or spell-check text files.

K-Roget costs £49.95 but at the moment there is a special promotion price of just £29.95. It is a useful program but I rather wonder whether it will sell at fifty pounds when you can buy a good paper-printed thesaurus for £10-£15. At the moment though that question's academic.... and it will remain so until Christmas time when the low price promotional offer, which makes the program reasonably well priced, expires!

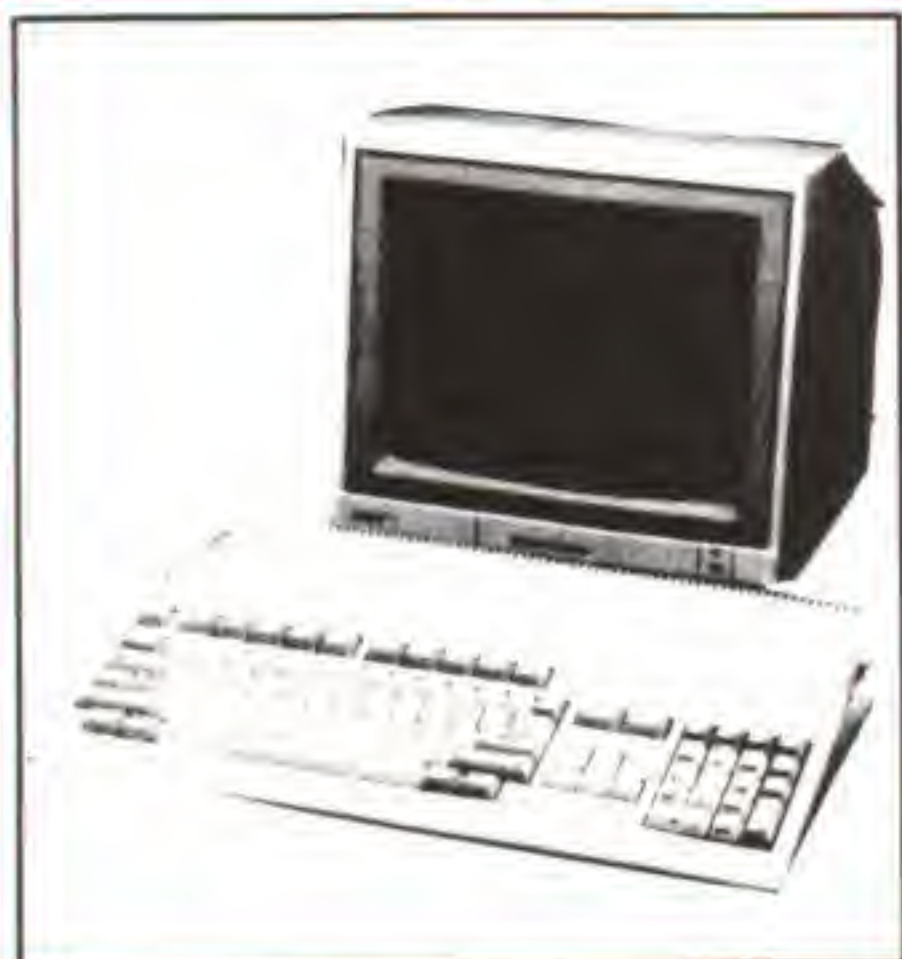
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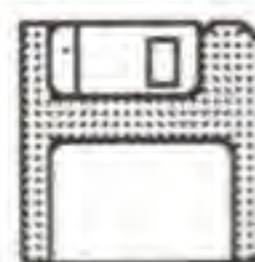
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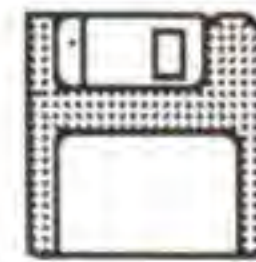
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The Games: Summer Edition *Epyx*

There was a time when Epyx were widely regarded as the best games software house in the world. *Impossible Mission*, *Pitstop II*, *Summer Games II*, *Winter Games* and *California Games* were all superb, and are still just as good today. Since then, a few mediocre releases have tarnished their reputation, but *The Games: Summer Edition* marks what could be their return to the top.

"The multi-player format has been retained, together with all the usual options for practicing and competing in all or some of the events."

The title has had a reboffe, but in effect what we have here is *Summer Games III*. The multi-player format has been retained, together with all the usual options for practicing and competing in all or some of the events. There are eight in all: cycling, diving, hammer throw, hurdles, pole vault, rings, uneven parallel bars and archery.

Typical of the whole game, the cycling uses a completely new presentation and control system to



that of *Summer Games II*. Rather than a simple scrolling track, it is set in a velodrome. The race is over three laps, but only the times of the final lap count. To conserve energy, both bikes weave around the track for the first couple of laps, slipstreaming at low speeds. Come the final lap, the clock starts and the sprint is on for the line. The solid 3D is a nice idea which works well, and although





neither player quite understands what they are doing, it is a good laugh all the same.

Springboard diving gets back to a more conven-

"You get a wide selection of dive variations, all accessed with combinations of the joystick and fire button."

tional format. You get a wide selection of dive variations, all accessed with combinations of the joystick and fire button. The animation is not nearly as smooth as the similar event in the original Summer Games, but then the central character is a good



deal larger.

The hammer throw is where you will find some of the game's best graphics. Using a rotational waggle technique, you build up speed as the athlete puts his back into it. Press fire to move into the second stage of the throw, and again to launch the hammer out

"As well as the large, realistic graphics, there are plenty of Epyx' favoured visual gags for unsuccessful attempts."

across the field. As well as the large, realistic graphics, there are plenty of Epyx' favoured visual gags for unsuccessful attempts.



A further helping of smooth 3D graphics is dished out during the 400 metre hurdles intro. The camera speeds around the stadium, coming to rest on the start line. One lap of waggling is punctuated by the hurdles, cleared with a press of the fire button. By holding the button down longer, you can increase the length of your leap, giving a greater chance of clearing the hurdle. A brush against a barrier may slow you down, but graze your knee too badly and you'll drop out of the race. The solid 3D stadium adds a touch of realism which helps gloss over the ageing stick-waggling control method.

The rings is a strange event. By switching from up and down to left and right waggling, you guide your gymnast through a variable sequence of holds and moves. The uneven parallel bars use a similar system. Graphics in both, although small, are surprisingly realistic, and the adventurous control methods are not the most user-friendly I've come across.

Again it is the view-points that give the next event, the pole vault, that something special. The run-up is seen from a weird vantage point, above, in front and slightly to one side of the athlete. For the vault, the display switches to the usual side-on view with a clever close-up replay screen.

Finally there's the archery. While you line up your shots, the blustery breeze is monitored by a windsock. That combined with the simulated wobble of the bow makes for a fairly realistic game. Consistently scoring eights, nines and the odd ten is not too difficult, so the competition is always close.

The Games: Summer Edition is a great improvement over Winter Edition. All those humorous details from the earlier games are back, and on the whole the graphics are very neat. The music irritates from the start, but it can be turned off to be replaced by adequate sound effects. Although the gym events can be fiddly, all eight are very playable, even more so with a bunch of mates. Let us hope Epyx can keep this up for California Games II. Highly recommended.

T.R.

Graphics: 8 Sound: 6 Playability: 9
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Mavis Beacon Teaches Typing

Mavis Beacon gives Len Keighley a few typing tips

When first using a computer one of the main problems that has to be overcome is the inability to type with any speed and accuracy. In the PC world there are a number of programs that teach the computer user touch-typing techniques. In some cases these are even available as shareware. Most of these, if not all, involve the typing of set pieces of text that in turn involve certain key patterns. This then slowly educates the hands to remain in a fixed position over the keyboard and the brain to remember where each key is placed without looking at the keyboard.

All of these programs have something in common, other than their purpose. They are boring to use and make the learning of touch-typing a chore. This may in fact, be responsible for the majority of computer users not being able to touch-type. Things are now changing. A piece of American software called 'Mavis Beacon Teaches Typing' has been produced by the Software Tool works company, publishers of Chessmaster 2000, and is being distributed by Electronic Arts. The package consists of a very sophisticated typing tutor which makes use of the computer's graphic capabilities to aid in the learning process.

The learning process is carried out in four main areas: the Chalkboard, the Classroom, the Workshop and the Arcade. The Chalkboard (American for Blackboard) is where Mavis will communicate with you, the trainee. Personal information must be entered so that the program can communicate, tailor the tests and keep your records. On the Chalkboard will be described the lesson that Mavis has suggested and the situation that this will help to remedy. At all times the lessons that Mavis presents are only a suggestion and they can be changed for something that you find more interesting.

The Classroom is where Mavis will

teach you the correct hand and key positions. The object is to type in the test that is displayed on the screen as accurately and as fast as possible. As you do so a pair of 'guide' hands displayed on the screen keyboard will also press the keys in the correct manner thereby showing you what your hands should be doing.

The Workshop is similar to the Classroom except that feedback information on your performances is provided, along with a metronome to help with your typing rhythm. The typing is again of text presented on screen and the 'guide' hands are also present.

The Arcade section is where the fun side of the package surfaces, while still retaining the training function. You are seated in a High Performance Road racer and are about to compete against the expert, 'Red Walter'. You control the speed of your racer by maintaining your typing speed and

'If you do not maintain your typing speed your car will slow and 'Red Walter' will pass and leave you in the dust.'

accuracy. The text to be typed is scrolled across the screen in the form of letter shaped vapour trails from a group of jet fighters. If you do not maintain your typing speed your car will slow and 'Red Walter' will pass and leave you in the dust.

All this makes the package seem quite simple and silly but its sophistication lies in the background work. Initially, at whatever entrance level you select (Beginner, Intermediate or Expert), Mavis will ask you to type some given text so that your personal typing characteristics can be established and a suitable training program presented. Once completed, all the sample texts will help you with those areas of the keyboard

with which you are having the most trouble. To ease the boredom the sample texts are selected from Historical quotes, riddles, rhymes, jokes and extracts from the Guinness Book of Records. Should you become bored with these you can also enter your own training text. All the 'Mavis' selected texts are tailored to your age group via the personal information.

The training records are extensive, with over 20 graphs which go down to the level of your typing speed on individual keys. Your typing speed and accuracy are tracked all through the training.

The PC package (the program is available for the Amiga and C64) comes on two 5 1/4' disks with a four page instruction booklet. There is also a 61 page book giving the history of typing, the basics of business typing and how to prepare a resume. As a special bonus there is an additional piece of software to help in the production of your resumé. The idea of this seems to be to encourage you to take up a career in typing once your training is complete.

The package is obviously aimed at the United States market and has won prizes in that area. It is unfair to call this program a typing tutor because it does attempt to go beyond this and teach some of the fundamentals of letter production and format as well. It is well-presented and takes a novel approach to what in the past has been a dry and dusty area.

This leaves one final point, who is Mavis Beacon? No mention is made of her in the text but there is a photograph of a lady on the box. Could this be her? Or is this a publishers joke? (*Publishers don't make jokes - Ed*)

L.K.

Prices: PC £29.99; Amiga £29.99; CC4 (disk) £24.99. Contact: Mindscape, PO Box 1019, Lewes, East Sussex, BN8 4DW. Tel. (044) 486 545.

DR. T's MUSIC SOFTWARE COMPANY

The Amiga is still lagging behind the Atari ST as far as MIDI software goes, but despite the gap (which is decreasing) there are a few good Amiga MIDI products available. At the present time a surprising number of these come from a single source.... Dr. T's Music Software Company, so if you're still wondering who Dr. T is... here's your chance to find out!

Dr. T's Music Software started out in a very small way during the early 80's. The part time venture, which was originally set up by Emile Tobenfeld, has grown and matured to produce a company that has gained itself a solid reputation in the music world. They've been able to get, and keep, the right mix of musicians, programmers, and management to create a team which is able to consistently provide high quality software for both the professional and the serious amateur musician.



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The Company's first products were a sequencer called the KCS, and a patch editor – both for the Commodore 64. Nowadays the range still contains C64/128 software but also includes Amiga, Atari, Macintosh, Apple IIe and IBM PC software. As far as Amiga sequencing goes Dr. T's KCS sequencer is available, tried and tested, and it is good – which means that they are leaps and bounds ahead of other companies who have for some time been 'almost ready' to release professional quality MIDI software for the Amiga. KCS was ported to the Amiga by David Silver and it was this program, coupled with a robust implementation, that made a lot of musicians realize that decent Amiga MIDI software was beginning to appear at last. While we are talking about the KCS package we have heard a rumour that some new Amiga KCS facilities are on the way – we will let you know more about these once we have received full details.

"A range of editor/librarian packages are also available including the 'Caged Artist' editor packages."

The KCS program may be the most well known of the Dr. T packages but it is in fact only one of many offerings! A range of editor/librarian packages are almost available including the 'Caged Artist' editor packages. These let you edit, copy and save synthesizer voices and so make voice creation a much easier task. They are useful for setting up and controlling both keyboard synths and rack mounted modules and they include 'goodies' such as the ability to use randomizing masks, MIDI re-channeling, mouse glissando facilities and parameter print out.

"If you are into MIDI programming and interested in the sequencer file formats then KCS users can obtain them just by writing to Dr. T in the States"

The Caged Artist programs, such as DX-Heaven are easy to use. They offer mouse-controlled envelope shaping, provide a number of different ways to change the program parameters and it is even possible to load and edit sounds whilst playing the synth from a master



keyboard or sequencer. There are several options available for filtering etc., and the programs include a 'MIDI slow' facility so that gaps can be placed into the data stream – some synthesizers, such as the early DX7's, have trouble keeping up with fast SYSTEX MIDI transfer so this is a useful option to have available.

Editor/Librarian packages are available for most popular synthesizers, e.g.... Yamaha's DX7, TX7, TX812, TX816, FB01, DX100, DX27, DX21, Kawai's K3 and K5, Ensoniq's ESQ-1, Roland's D50, MT32, M6, Korg's DS8, DP-2000/3000 etc. The four operator version for the Yamaha FB-01/DX100 type range can also be used with the TX81Z polyphonic rack mounted synthesizer module – I have not yet had the chance to try this particular editor so I am not sure at the moment how well it integrates with the TX81Z's very comprehensive MIDI control facilities.

Dr. T's other products include

'Copyist Professional', (which *AUI* looked at last month), some algorithmic composer software packages, hardware such as MIDI interfaces and sync boxes and a host of other items aimed at the serious musician. They are quite a helpful bunch as well, e.g... if you are into MIDI programming and interested in the sequencer file formats then KCS users can obtain them just by writing to Dr. T in the States (a small charge is made for postage etc. – see the KCS manual for full details).

Dr. T's Music Software have already supported their products through two generations of computers and show every sign of continuing to keep up with the ever growing music market. Whatever computer you intend to be using in five years time you can bet your life that, if it is a popular model, Dr. T will be writing good MIDI software for it – and that, for a lot of musicians, makes Dr. T's Software a very good bet indeed.

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P:A:S:E

Fine-tuning your animations may have been hit and miss until now, but Peter Lee looks at a new sequence editor which could be right on target

A look at any graphics software catalogue for the Amiga will show how much a professional tool the computer has become. There are plenty of hobbyist programs it is true, but a greater share of the market is being taken by products aimed squarely at the professional. The Amiga has found a foothold in the big league, and it shows in the software.

It also shows in the highly focused applications which have been created, in the specific and complex needs software developers are trying to satisfy, and also, it has to be said, in the cost. And, following this trend for top-quality, highly specialised software for use by people whose livelihoods depend on it, comes P:A:S:E, the professional animation sequence editor from Pure Graphics.

The program creates an environment in which animators can feel at home, giving total flexibility over cel animation and editing. It uses a sophisticated and initially complex front end to tailor-make your sequences down to the split-second.

"The main functions of the program are to create animation sequences from IFF files, and the playback and editing of the sequence created."

P:A:S:E runs in 512K in either PAL or NTSC (with a recommendation for additional RAM to improve your Amiga's graphics capabilities and animation lengths), and comes on one disk, which employs the keyword protection (entering a specific word from the manual); this enables you to make a backup, or install it on your hard drive - which gave me the only hiccup of the entire review.

The hard disk installation file failed twice through sloppiness, but I was

assured by Pure Graphics that this was in the process of being rectified. I simply did the job manually to overcome the problem (which included the P:A:S:E disk dumbly trying to copy a non-existent drawer from itself...)

The actual control screen looks like it was designed by someone who is colour blind, featuring an insipid washed-out look; this is not merely a cosmetic gripe, because the amount of control options available on the screen is around 50, and you need all your wits about you.

Control is by mouse or keyboard shortcuts, with numeric parameters adjusted up or down by arrow gadgets. A small sub-screen can be called up, which overlays part of the display, but apart from this, all actions are governed from the one area, which does have its advantage.

The main functions of the program are to create animation sequences from IFF files, and the playback and editing of the sequence created.

The biggest problem I think the program currently faces is that it does not support the ANIM file format, I cannot conceive why a professional animation package should overlook this. There is a somewhat condescending mention in the manual of a possible ANIM file converter in the pipeline. But a more encouraging note was sounded by the company themselves who told me they were making efforts to include such a utility with the program; when that happens, registered owners will be informed.

The argument that P:A:S:E offers far more scope for manipulation in its current form does hold water - but I would have at least liked the option to run a



program to splice out the component frames from an ANIM file and save them ready for P:A:S:E.

The program uses as its prime source individual IFF frames, of any resolution admittedly, but this means it cannot load in the files in the ANIM format.

At startup, each frame is loaded in individually, and because of this the frames must follow a rigid filename format (pic00, pic02 and so on). Once inside P:A:S:E they are animated as fast as you could wish within the speed limits of the program itself, and once the editing is completed the script and the completed animation (composed of DAFs - that's Difference Algorithm File) is saved.

I am a big fan of the Sparta ANIM format; a lot of my software recognises this and panders to me. To get my anims into P:A:S:E I had to load them into either DPaint III or AniMagic, and re-save them a frame at a time - not the most progressive or productive way to spend a hot afternoon, believe me.

But personal prejudice aside, frames from any number of IFF programs can be saved to be animated - of course DPaint itself, Photon Paint, Videoscape, Digi Paint and so on - and then the program comes into its own in terms of animation.

"The display can be single or double buffered and the amount of time a frame is on screen can be individually set, or as a range of frames."

Once a series of frames has been loaded into memory (bearing in mind the constraint on frame numbering, which is vital for a successful automatic load), the editor comes into its own.

With it you can cut, copy and paste frames at any point in your animation, and set loop points to create a long sequence. The display can be single or double buffered and the amount of time a frame is on screen can be individually set, or as a range of frames.

The mechanics of editing are straightforward, aided by self-explanatory icons (scissors, camera etc); working with the contents of a buffer which you have filled with a single frame or a range, you can flip the frames (from last to first or vice versa) then 'glue' them on to your current animation.

As for looping, this could not be simpler, requiring simply start and end frames and the number of repetitions.

The step-time editing facility permits you to advance through your sequence a screen at a time, making any



adjustments to the dwell-time or loop point function.

P:A:S:E can use so-called Macros, which are simply sequences of DAFs (compressed frames) which are the saved contents of the clip buffer. They can be treated as animations in their own right, or appended to different ani-

"One outstanding feature of the editing facilities - and they are extremely valuable - is the Data option."

mations. Best use for this I found was for my end credit sequence, a sort of finale which can be added to any animation I create in the future. A nice feature is the ability to have frames replayed in their saved colour, regardless of what precedes or follows them. And if your current disk is full when saving, you are permitted to spill over frames into another volume, and this will be requested at the time of re-loading, preserving continuity.

A background frame can be selected from those loaded in, and the animations will play out against this.

One outstanding feature of the editing facilities - and they are all extremely valuable - is the Data option. Once activated, this will open up an information window onto your animation, which steps through with the press of a key on the numeric keypad. This has now become your editing console.

Information, which is updated as you scan from frame to frame, includes the frame number out of the total frame count, the dwell period, memory type (Fast or Chip), master speed, loop details and other important facts.

In step-time editing, the function keys assume control of the editor. Things tend to get complicated here, with some keys having dual roles (alone and in conjunction with the control key). But the manual clearly defines the keys, and though I would have welcomed a keystrip, it only took 2 minutes to make my own.

Scripts can be saved in two forms - the FULL version, which includes all editable data, including room for planned P:A:S:E expansion modules, or ECON, which cuts down slightly on the amount of information saved but which is obviously quicker to re-load because it contains less data.

Even if you have expansion mem-

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ory, if your animation is long, or chip memory low, the program has the intelligence to optimise allocation, giving you the opportunity to cram all your frames into Chip RAM for faster playback.

A nice feature is included called the Skip, which lets you move through your frames a set number at a time (if the skip is set to 3, every third frame only will be

"Another well-thought out option will permit the setting of a new centre for your animation."

displayed) which helps in fast-forwarding through sequences to test them. Another well-thought out option will permit the setting of a new centre point for your animation.

Accompanying the program is a freely-distributable DAF player program, which can be invoked from the CLI, and which you can use to pass on your animations to friends or associates. And in the pipeline are proposed addition modules for P:A:S:E which will allow the creation of an even more sophisticated utility.

The manual is almost as professional as the program, with one or two points lacking clarity (likewise the murky illustrations), and as a bonus for the



eco-minded it is printed on recycled paper.

CONCLUSION

Long before I was aware of P:A:S:E I had a desperate need for it. It is highly specific, but it fills a gaping need in the field of Amiga animation. Its flexibility is offset by a rather complex user interface, which could have had a bit more time spent on it both cosmetically and in design. I am told the problems about the

hard disk installation and the lack of an ANIM converter are to be resolved. Until they are I cannot whole-heartedly recommend the program. Other than that P:A:S:E hits the target bang on, and is an invaluable tool for the serious animator in need of a good editor.

P.L.

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Programming Tools - Part I

'Intuition Code Generators'

Paul Andreas Overaa starts a new series on programming tools to help you master your Amiga

There is little doubt that the Amiga is a complex computer. If you arrive with a background of Basic, or even experience with 8 bit assembly language then the chances are that the manuals will appear daunting to say the least. If that is not enough there are additional problems.... the Amiga simply does not tolerate bad, or 'slack',

"The home computer market has never seen anything which even closely resembles the sophistication which the Amiga embodies"

programmers. Because there is no hardware memory management it is down to the applications programs themselves to both respect and adhere to the conventions required in the software controlled multi-tasking environment. Still worse..... there is much fresh ground to cover and this includes learning to program in C before you even start to do any useful Amiga programming. Whether you like it or not you will need to understand the language simply because all of the Amiga manuals, and most books written for serious Amiga programmers, will assume that you are fluent in this language.

If this all sounds a bit frightening please don't be put off - once you are over the initial problems, things get

easier. The home computer market has never seen anything which even closely resembles the sophistication which the Amiga embodies so, if you do it the courtesy of understanding how it works, it will repay you time and time again.

One problem that you are likely to encounter right from the start is finding out how to receive information from, and send information to, the Amiga's WIMP orientated user interface. Commodore's Amiga uses an interface known as Intuition which supports a host of 'user friendly' items. A typical user 'communicates' with the Amiga by using such things as gadgets, requesters, menus etc., plus other input devices such as the mouse, keyboard or joystick. Intuition continually monitors this information using what it needs and passing the remainder on to any interested programs which are running.

Many programming practices, such as checking operating system calls to ensure that no problems have occurred, become important very early on - especially when they concern demands for specific resources from the operating system. The programs must deallocate such resources when they terminate or else the operating system will never know that the resources in question are no longer being used by that particular program. Wait loops, another common 8 bit programming technique are definitely a 'no-go' area. With a multi-process O/S they will tie up the proces-

sor unnecessarily and thus will degrade the overall performance of the system. Instead your program must ask the multi-tasking executive to allow the program to 'sleep' until something of

"Often you will find yourself wanting multiple windows, lots of gadgets, file requesters, and all sorts of other intuition based objects."

interest happens. Under such an arrangement the program will not use any processor time until a message from Intuition wakes it up with a message saying 'that event which you asked to be informed about has occurred'. The Amiga's message passing arrangement is quite fascinating but to start with all that one really needs to know is that a program can ask Intuition to give it messages on every input or time based event which could happen. Any single program is liable to be interested in only a small sub-set of all of the events passing through Intuition's event handling system..... by being selective about the types of events which it chooses to be told about a program can save itself the trouble of having to handle messages relating to things which it does not care about.

Are there any more headaches? Yes, I am afraid there is: In order to use

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things like gadgets you need firstly to be able to set up Intuition's screens and windows and secondly you have to create all of the structures representing the gadgets and other items to be used by your application. *AUI* has covered, and is continuing to cover, details of the type of programming involved and to create and use an Intuition screen, a window, or a couple of gadgets, is not too much of a problem. The trouble usually begins when you start to create 'real programs', i.e. programs which aim to do something useful. Often you will find yourself wanting multiple windows, lots of gadgets, file requesters, and all sorts of other Intuition based objects. In isolation all of these types of structures are easy to create but, taken together, it is a different kettle of fish. The code relating to such objects often takes a long time to write and is prone to all sorts of 'silly' errors. Fortunately there are some Amiga program development tools around that do a good job in automating this particular area of the program development cycle. Power Windows and KGadget are two such tools and we shall make a start by looking at these products this month.

POWERWINDOWS

Version 2.5 of PowerWindows has recently been released by Inovatronics Incorporated. This not only supports the use of standard Amiga Intuition objects but provides the unique gadget and menu functions of the Company's 'InovaTools 1' package. Essentially it provides you, the programmer, with the ability to create and edit screens, windows, gadgets and menus using an 'object orientated' approach.

Screen definition is a straightforward job and PowerWindows supports both standard and custom screens. You can set the colour palette directly or can incorporate a palette from any convenient IFF file. Windows are equally easily created and, once present on the display, can be moved around and resized using normal mouse operations. Adding gadgets to a window is just a matter of selecting the 'add a gadget' menu option, adjusting the gadget's size and then moving it to the desired position. Menu generation is equally simple and although not often needed you can incorporate include IFF brush imagery with the menu.

One of the more powerful features of PowerWindows is the 'Grab A Window' menu option. When you select this option you are offered a menu which provides details of all of the screens and windows for all applications which are currently running. To grab a window you just select its name and the window, plus all of the associated gadgets and menus, will be imported into PowerWindows. Only the window, text, gadget imagery etc., which is directly 'pointer

linked' to the window will be imported so sometimes you'll be disappointed with the results but this is nevertheless a very useful function. PowerWindows can also help with IDCMP event handling and this helps to develop a standardized approach for this type of code.

Once you are happy with the display, PowerWindows can do one of two things. Firstly it can generate an 'intermediate' file which contains the display data in a form which can be read back into PowerWindows itself - this enables you to edit the display at a later date. Secondly it can generate the source code that your own programs can use to produce an identical display. There are several options available for code generation (either commented or uncommented) to be used with 68K assembler, Lattice C, Manx C, Benchmark Modula 2, TDI Modula 2, Multi-FORTH, TrueBASIC, AmigaBASIC, and ACBASIC Compiler v1.3.

Full control of screen, window, gadget, menu, text and border characteristics coupled with many other extras such as gadget cloning, collision checking, colour re-mapping and image compression makes PowerWindows an extremely useful tool for the serious programmer.

KGADGET

KGadget comes from Kuma Software. It's been around for quite a while and although it doesn't have the same range of facilities as PowerWindows it remains a very useful utility. Again it adopts an 'object orientated' approach, i.e. gadgets are positioned by picking them up with the mouse and moving them to their required locations. KGadget handles the creation of all of the usual types of gadgets and can produce requester structures as well. To create a requester you simply pick up a requester template, adjust its size and drag it to the required position. Having done that you can add gadgets to the requester by picking up 'gadget templates', and moving them into the requester window using the mouse. When you are happy with the display you ask KGadget to write the code for you. Again you have full access to gadget flags, text and border structures etc., and can save 'intermediate files' as well as generating the final source code. KGadget sets its sights lower than PowerWindows, but for many applications the end results can be identical. I have always found KGadget a convenient program to use and most of the standard requesters that I use in my own programs were created using this package.

GETTING RESULTS

Using a code generator for handling the Intuition Interface has many advantages. First and foremost it will save you time! Secondly you work with a display

that you can actually see as you create it. Thirdly you can, by keeping the reloadable 'intermediate files', go back at a later date and make any changes to the display which may become necessary, e.g. reposition gadgets or add extra menu items. Once the changes have been incorporated you just generate the new code, recompile and your new version will be up and running in a very short space of time! You can of course also use these types of tools to produce prototype interfaces to test ideas, or to quickly produce a 'rough and ready' skeleton interface which can be used to test and build your applications program. When you have finished your program you can then spend time creating a more presentable interface, generate the new interface code and just swap that for your preliminary version.

Whilst on the subject of code generators, don't forget that you can always 'tweak' the source code that has been produced to suit your own purposes. I often like to create general arrangements for things such as file requesters, and requester based 'yes/no type' confirmation boxes. To avoid name clashes when the utility chooses a default naming system for a series of objects I will often run the generated code through a text editor to change or globally prefix the names of the structures which were created.

Another good reason to 'modify' the generated code is to reduce its size. If for example you create a display with 24 identical gadgets each having a border then the generated code will have 24 identical border structures, one for each gadget. In such a case Intuition doesn't need 24 instances it will happily manage with one so the trick is to read the generated source into a text editor, remove 23 of the identical structures, and then change the border pointers in each of the 24 gadgets so that they all point to the single remaining border structure.

How good are the results? They are not bad at all! Figure 1 shows some C code generated by PowerWindows, Figure 2 shows a similar type of KGadget output, Figure 3 shows a utility program that uses a background IFF picture which has been read directly into the screen memory. By opening a full size borderless window containing all of the necessary gadgets the gadgets get superimposed on top of the underlying screen display... this is an approach that quite a few utility programs adopt. Lastly the display shown in figure 4 shows a code generator based requester in action!

P.A.O.

Prices: PowerWindows v2.5 £59.95 (inc VAT), KGadget £29.95 (inc VAT).

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Daily Double Horse Racing

CDS Software

If you were given \$500 to spend, or do with whatever you please, would you take a gamble and maybe use the money as a stake on the horses? You would? You are then invited to spend a complete day at the races, courtesy of CDS Software. Some people are born lucky, whatever they seem to do with their money, they just seem to be able to make more and more money. If you think you may be one of these lucky people then you should at least try this horse racing simulation to see if you really are lucky. I am quite lucky myself, without having to risk losing lots of real money I have taken up the challenge of the Daily Double, and am now hooked on it.

CDS Software have turned out some quite good games for the Amiga including Colossus Chess, Steve Davis Snooker and Brian Clough's Football Fortunes to name but a few. This new game is of the same standard, high, but not totally mega brilliant.

The game comes with a Racing Newspaper that contains details of 180 different horses. All their history of previous races are recorded so you can ascertain their current form and how they have performed with different jockeys, over different distances and different going.

You can decide to make a bet on any horse in any race, there are several types of wagers you can lay,

race number will display the field showing runners and riders with their odds. Up to four players may take part, each taking turns to pick out whatever takes their fancy. After choosing the type of bet you wish to lay then you hand over your stake money to the cashier at the bookies desk.

Digitised speech announces when "They're off!",



and again at the winning post after you have watched them thunder down the track to a thrilling finish "and the winner is number five" etc. You are given the choice of an instant replay of the final furlong, either normal speed or slow motion. The animated horses are quite realistic though nothing to write home about.

The form guide is very important, just as in real life. Time must be given to this study if you want to make the most of your money. There is a race card for a complete day at the course taking in ten races. In each race there are six horses, the distance raced varies from three furlongs to eight.

After each race the players names in turn are displayed showing what bet you placed and whatever winnings you have to come to you. Good luck! You will need it.

Overall, Daily Double is good value for money, entertaining and has all the possibilities of leading you down the rocky road that all gamblers walk. Towards riches or rack and ruin, who knows?

B.C.

Graphics: 7 Sound: 7 Playability: 8
ABSOLUTE VALUE: 7 Price: £19.99



straight wagering for a win, place or show. Betting on two horses again allows other types of wagers such as exactas, parlays, quinella or the daily double.

Game controls are by the mouse, pointing to a

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EXTRACT FROM CHEEZ BURGERS **DIARY AUGUST 1982.....**

Today was one of those days- you know, bad from start to finish.

I'm usually a very deep sleeper, nothing wakes me, but last night I was woken by.... well, some strange noises. Creaking floorboards and the like. I could not sleep a wink after that. I sat listening in the darkness. At one point I reached for my gun. I crept around found the light switch and.. nothing!

The damn noise was getting louder, glancing at the window it was glowing blue! Carfax seemed to be shrouded in a swirling fog which had an eerie blue tint to it. Then the old church clock struck one... As I watched, the fog seemed to disappear, and then I noticed...nothing! Not a sound. I told myself to go back to bed and forget all about it, and that it was a dream.

By morning I wasn't convinced.

AUGUST 17

This morning I heard three voices in the library.

Perhaps it was ghosts?

A book fell on the floor, and then another, and with each step I took, I could hear more books falling. I threw open the door, but couldn't believe my eyes, there was nothing there apart from some books, and three empty bottles of wine.

AUGUST 20

Tonight I will lie in wait and find out just who enters my home without my permission and give them a surprise....

THE DIARY ENDS HERE APART FROM SOME SPIDERY WRITING WHICH SAYS

Cheez, we are so sorry. You were the first human who did not want to send us away. You were our friend. You should not have died like that. But now at least we will be friends for good. Forgive us our weakness, that we could not help you

Yours Ludus.

◦ Sinister goings on indeed! Just what fate has befallen old Cheez Burger at Carfax Abbey? What is Ooze? Is Vino really an old drunken ghost? Just

On the front-porch.

(c) 1989 DRAGONWARE



my feet. I look around but there's nothing - just some trees in the shadows. "Must be the end of the world", I think indignantly, walking over the moaning boards to the door.

♦ You dont need glasses

Ooze - Creepy nites.

(c) 1989 DRAGONWARE



Warm room.

♦ Ugggh stuff, man!

♦ Kitty comment from photographer

some of the questions to be answered in Dragonware's latest adventure 'OOZE', the first in a series of CREEPY NITES programs.

You play the part of Cheez Burger's nephew Ham (Hamburger get it?)

who has been informed that since Cheez has passed away he has inherited Carfax Abbey and all that goes with it.

The adventure opens with you armed with just your uncle's diary standing outside the gates to the old mansion plucking up the courage to enter the dilapidated gloomy old place.

From then on things go from bad to worse as far as your character is concerned, while the actual adventure is remarkably well written and presented. It seemed that your uncle was a bit of a spiritual Doctor Doolittle in that instead of talking to the animals, he managed to make friends with all the ghosts that lived in the Abbey! They tell him that they are in the grip of a tyrant called Ooze, a master of evil, who appeared one night and took over. He and his loyal minions rule Carfax Abbey now and anyone, ghost or mortal, who opposes him will perish. So, mixed up with all the spirits in the house are bad ghosts, ordinary ghosts and good hosts - like Vino, Slime, Ludus and Holunder. They will prove useful to you in battling Ooze, but first you have to win them over - after all, you are not Cheez, are you? Of course your problem is extended, because you don't know who is who - yet!

That then gives you an overall picture of the plot. How does it all come together? The screen layout is in three sections. The topline shows which location

you are in. Underneath comes the variable graphics window (mag scrolls style) and under that comes the text.

Talking of graphics, they are very nicely drawn with some atmospheric sound FX to go with them. My only criticism is that the sound is heard before the text or illustration has appeared, which is a bit like bolting the door before the horse has arrived and tends to spoil the unknown event somewhat.

The parser is confident enough to deal with most requests and finds a sentence like 'pick up the book, the bag and the pencil, now place the coat on the table, quickly climb the stairs in the east and look around' a piece of cake.

Thankfully, my famous key/open door/which door/which key routine which is played by Infocom and Mag Scrolls is not here. The program accepts that you open the door with the key as long as you are carrying it. I will not give away any secrets here, but be prepared for many instant deaths, from things not of this world, which means save as you go very frequently and soon things will start to fall into place (literally!). Examine everything, you never know what is hiding behind that couch or under that blanket now do you?

In the game box comes Cheez Burger's complete diary wherein I suspect lie more than a few clues for any aspiring adventurer to find, although it took me a while to dig them out. This is the most impressive Dragonware adventure I have seen to date, with lots more promised and I recommend playing it with all the lights out and have something nearby to bite on!

A.M.

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Paragon/Micropose

In *Twilight's Ransom*, a graphic adventure, imported from America, you only have 12 hours to find out who has kidnapped your girlfriend, why they would pick on a seemingly poor Salvadorian waitress, where she is being held and, finally, try to formulate a plan to rescue her.

The game is produced by American software house Paragon Software but has, recently, been licensed by Micropose and distributed on their Medalist label.

The package arrives with two disks, a short manual and two trinkets which serve as clues. The first is a piece of paper with scrawled, meaningless

writing on it along with a tourist leaflet of Liberty City.

You play Ron Mulligan, a young artist employed by an advertising agency in Liberty City. Your girlfriend, Maria Chavez, works, or rather worked, at a popular Hispanic restaurant. You have only known each other for a few months and what with you working all day and Maria working all night, along with her evening classes you have not had much chance to, well, be alone together, as it were. It was on that night, when, at last, you would be able to spend some time together, that you find the door of Maria's flat wide open and the flat ransacked. It is while picking through the debris that the telephone rings...

Success in *Twilight* often seems to lean more on your ability to manipulate game saves and handle all of the objects than on your ability to deduce answers or to remain calm under pressure.

The parser is good, handling just about everything I throw at it. So, for example, it would accept, "Break the window with the brick. Take the watch, then climb up the fire escape" plus the use of IT, "Take the rock then throw it through the window".

The writers have, apparently, learned their lessons well from their predecessors because the locations of the objects needed for both Maria and your character are both logical and inventive. The uses of various objects are both surprising and practical.



The graphics, while not up to the best of, say, *Magnetic Scrolls*, are reasonably good. However, they are strictly icing on the cake. They do not play any interactive role. As this is the Amiga version, *Twilight* enables you to use the Say speech utility.

Twilight's Random does not break any new ground, as far as adventuring goes. However, that is not a negative criticism; it is just a little unusual for a "glossy" software house not to sport some new feature or other.

The essential elements of adventuring are well designed. Atmosphere, puzzle quality and logicity are well implemented. It would have been nice to have a map as part of the packaging.



I am not too sure about the time limit, it has never been one of my favourite aspects in any adventure, although that is purely a matter of taste. But the game is certainly worth recommending. The one big problem is cost. If you wish to buy *Twilight* you could hang on and hope that Microprose bring the game over here. If you cannot wait contact Computer Adventure World, Bank Buildings, 1A Charing Cross, Birkenhead, L41 5EJ. Tel: 051-666-1132.

P.R.

Paragon, as well as *Twilight*, have another title licensed under Microprose's Medalist label. *Guardians of Infinity: To Save Kennedy* is an adventure in the style Infocom's *Suspended*. Only available on PC, at the moment, it deals with the hypothesis that Kennedy was never meant to be assassinated. It is, so far as we can find, the only leisure-based product to be programmed in Prolog, the artificial intelligence language.

Paragon has an agreement to portray Captain America, Spiderman and Doctor Doom, in a long range project which will attempt to combine arcade action with the artistic quality of the Marvel comics in which the characters appear.

Graphics: 7 Sound: N/A Playability: 8
ABSOLUTE VALUE: 6 Price: £34.95



THE PERSONAL COMPUTER SHOW
 27 SEPT-1 OCT 1989
 EARLS COURT LONDON

HEARD IT ON THE GRAPEVINE

Although the organisers would have you believe the PC show is an exhibition of entirely business-orientated products, it is still without doubt the event of the computer gaming year. With a few major software houses opting out of a stand at the show, preferring to meet the press at their own do's, speculation that the rest would follow suit has come to nothing. Rather than conspicuous by their absence, as some had commented in the past, those not attending this year's were merely absent. The extravagant set-ups from Ocean and US Gold among others, made sure that out of sight was definitely out of mind.

On entering the immense hall at Earls Court, I couldn't help noticing a lack of tarty young women in silver mini-skirts. Those girls have come in for a lot of flak recently, but you have to admire someone who can keep up a cheesy grin, when for the last six hours they've been handing out leaflets to thousands of computer buffs, many of whom are strangers to the concepts of dress sense and personal hygiene.

Looking beyond the very business-like, yawn-inducing stands at the entrance, it was immediately obvious that Ocean had



not squandered their floor-space. A huge video wall ran loud promo videos of their forthcoming attractions, spliced with movie clips from their box office tie-ins. Last year they



OCEAN'S CHASE HQ

had an armoured car on the stand. This year it was a couple of immaculate American motors. During the current American 50's revival, it would be quite trendy to reel off the names, years of manufacture and chassis numbers of these desirable hot rods, but I'll admit to not having a clue what they were. That's the kind of square I am. A walk-through arcade was showing off the coin-op versions of their much publicised yuletide-to-come releases, all on free-play as usual.

Strolling through the arcade and out the other side, it was all too easy to miss Elite's modest effort. A single A500 running Paperboy couldn't hope to compete with the Mancunian mountain that overshadowed it. In these occasional patches of no-

man's land, the less splendid exhibitors lent the show a flavour of the old time ZX Microfairs, not crammed with market stalls selling the latest releases at unbelievable prices, but small businesses showing off all manner of graphic and sonic digitisers, labour-saving gadgets and assorted other clever little black boxes.

"US Gold, like Ocean, had none of their games available for playtesting. Instead they chose to pull the crowds with a sizeable collection of appropriate coin-ops."

Each pocket of gizmo stands was regularly punctuated by the giants of the games market. US Gold, like Ocean, had none of their games available for playtesting. Instead they chose to pull the crowds with a sizeable collection of appropriate coin-ops. Pushing their Turbo Outrun license was a Ferrari Testarossa parked up beside the stand (maybe someone should have told them Tur-

side coin-op cabinets. What they were not showing on the stand was Space Ace, the follow up to Dragon's Lair. Featuring bags of digitised speech and music, Space Ace continues in the interactive cartoon theme. A second helping of those amazing graphics is on the way, but this time I'm promised there will be some gameplay. No playable versions have yet made it across from

from Marvel Comics, and Time, the next from the creators of Sleeping Gods Lie.

"Accolade were there too, giving testers of imminent releases with their promo-video."

Accolade were there too, giving tasters of imminent releases with their promo-video. Blue Angels was one that sounded promising. It's a formation flight simulation, putting you in a team of expert demonstration pilots. A handful of exterior views can be selected in preference to the cockpit view, as you attempt a

Donning his Show suit, Tony Horgan hunted the aisles of the Personal Computer Show, picking up the whispers of the games world future. Here is what he heard...

bo Outrun features the new F40). I suppose I shouldn't be too hard on them, as they were running a competition to win the coin-op itself. Not only that, their ample PR team more than made up for the lack of grinning girlies at the entrance. I'm not that gullible though. I know they only want me for my column inches.



VIRGINS DOUBLE DRAGON II

If it was a taste of things to come you wanted, the Virgin stand was an essential stop. Playable demos of the 16-bit versions of Continental Circus, Double Dragon II and Ninja Warriors were all on show, and looking pretty good in their various states of completion. Hewson were another offering playable previews. Stormlord is looking particularly pretty, with some excellently detailed sprites and background features, although the gameplay is identical to the 8-bit versions. Hard Drivin was also there for the playing on the Domark stand. Apart from a slight reduction in the amount of visible features, it's hardly distinguishable from the coin-op, running at a very respectable speed, just below that of the original.

Titus combined the playable preview and free-play coin-op ideas, fitting their current range in-

the Canadian Readysoft, who hope to have it finished by the end of October. Gazza's Super Soccer is



GAZZA'S SUPER SOCCER

another footie game, but it does have something different on offer. Action around the centre of the pitch is viewed side-on, but goalmouth play is seen from the centre of the pitch, looking directly towards the goal. Sounds to me like a cop out from the programmers who couldn't scroll the screen, but I'm assured that it improves the gameplay no-end. Others to be releases on the Empire label include Dr Doom, licensed

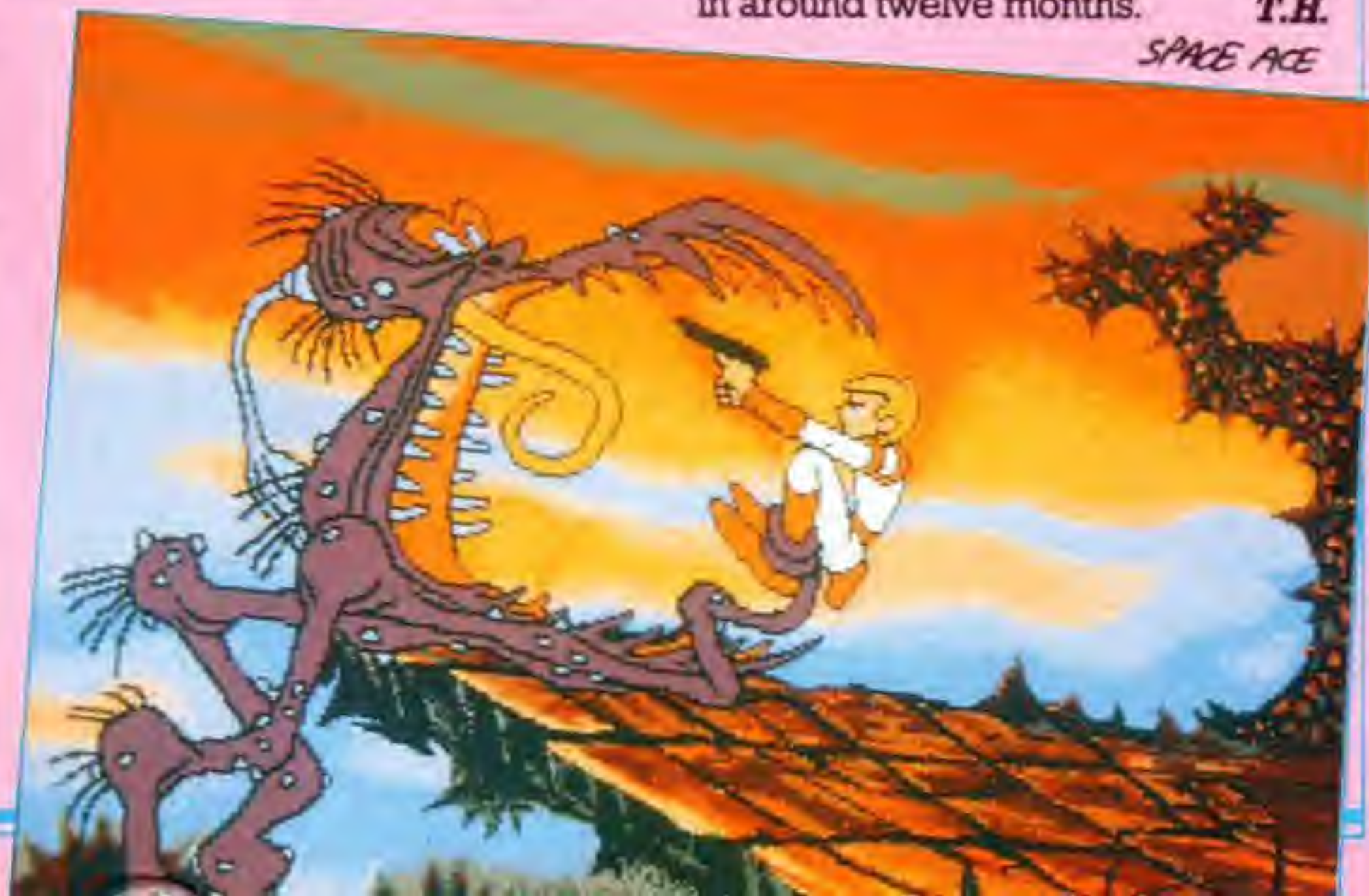


string of gut-wrenching manoeuvres, before watching it all again in the action replay mode.

There were a few things missing from the show, other than the few absent software houses and promotional beauties. Free carrier bags were in short supply compared to recent years, and previews of mega-games destined to be scrapped in three years' time were thin on the ground. A few old faves could be found if you looked hard enough. Damocles was being previewed again, Jeff Minter was doing weird things with multi-coloured pixels, and DTP salesmen were doing their best to sound authoritative, whilst giving their sales pitch to a packed house of two. You missed it? Don't worry, there'll be another one along in around twelve months.

T.H.

SPACE ACE



THE 
PERSONAL
COMPUTER
SHOW

27 SEPT-1 OCT 1989
EARLS COURT LONDON

HEARD IT ON THE GRAPEVINE 2

Who wasn't there...

Mirrorsoft were one of the few who decided to give Earls Court a miss. Instead they made the opportunist move of inviting the gathered press to their own get-together at a nearby hotel. Here they announced an interesting line-up across their five labels, including the next from the Bitmap Bros, and Image Works' first film tie-in.

Cadaver is to be a bit of a departure for the Bros. It's described as a fantasy roleplaying arcade adventure, with all the fiddly bits removed. A mass murderer is on the run, and he's already slaughtered the search party originally contracted to bring him in. A strong, brave, quick-witted man like yourself is needed to track and kill this menace. Isometric 3D graphics up to

the usual Bros standard are promised, as is plenty of spell manipulation and monster bashing.

More spooky going on are to be found in **Theme Park Mystery**. The Scooby Doo style plot involves the "Magic Canyon" theme park, which you recently inherited after the death of your Grandfather. All the staff have left, and no-one has visited the park since rumours circulated of some kind of curse upon the park. They say whatever it is drove your Grandfather crazy, so it's with some trepidation that you set about rebuilding the business. Details of the gameplay are scarce, but it will be an arcade adventure, which Mirrorsoft claim will take the industry by storm (where have I heard that before?).

Their first movie tie-in is lined up

for release in early 1990. **Back to the Future II - Paradox**, sees Marty McFly in a spot of bother in the year 2015. When Marty finds records of the main sporting results of the twentieth century, he's tempted to travel back in time and win a fortune at the bookie's. Doc, the nutty inventor of the time-travelling DeLorean, talks him out of tinkering with his destiny, but Bif has other ideas. It's up to you once again to make sure the preordained sequence of events go ahead as planned.

It Came From The Desert is still "nearing completion". It follows similar lines to previous Cinemaware games, with a mix of stunning stills, strategic elements and arcade sections. The plot is a parody of the laughably un-scary horror films of the fifties. Lizard Breath was a sleepy town in the middle of the Arizona desert. Nothing much ever happened, until a meteor landed nearby, radiating a field which caused the local ant population to grow to enormous proportions. Ever the mug, you set out to put a stop to the overgrown bugs.



Following on from the Falcon mission disk are three more from Sepctrum Holobyte. **Vette** gives you the opportunity of a joyride around San Fransisco in a sleek new Corvette. All the city's streets are said to have been recreated, along with the hills and famous landmarks. A variety of views, both interior and exterior, plus the option of a two player head-to-head are just a couple of the features which Mirrorsoft reckon will make it the hottest driving simulation around.

Combining the flight sim and wargame genres is **Flight of the Intruder**, licenced from the US best-selling book of the same name. The player gets to direct his men on the battlefield, whilst doing his bit in ariel combat. Yet more wartime adventures are on the menu with



M1 TANK PLATOON

Tank. The same old Yankees vs. Reds scenario has you leading your company, platoon or just yourself into the solid 3D battlefield. As in Vette, your perspectives can be switched from the handful of internal views to "spotter plane" views for an immediate assessment of the situation.

Others not taking a stand at the show this year included Activision. Nevertheless, they have a mean looking line-up for Christmas. Sega's amazing **Power Drift** is coming along very nicely in its Amiga format. Obviously it could never move as smoothly as the unbelievably powerful coin-op, but other than that it looks very close to the original. Sampled sound effects including the coin-ops speech will be included to keep the authentic arcade feel. **Altered Beast** has just been completed, and **Ghostbusters II** is almost there.

Microprose, who last year had the most spectacular stand with an

amazing 'real life' simulator, played it cool with only an upstairs hospitality

MICRO PROSE
SIMULATION * SOFTWARE

suite. Major Wild Bill Stealey with the recent departure of Stuart Bell, now taking a hands-on management role in Microprose, tells us they have some 'Microprose standard' (he means top quality) releases to come shortly. **M1 Tank Platoon** and **Stunt Car Racer** was the charge to be followed by **F15 Strike Eagle II** and **Pirates** on the Amiga - with all new sparkling graphics.

Finally, a couple of late items of interest are that Jez San's potential world-beating flight simulation, codenamed 'Hawk', for Electronic Arts who were at the 'nearby hotel', is now very near to completion, and Jeff ('I still love Llamas') Minter has announced plans for an Amiga conversion of his ST "Light Synthesiser" Trip-a-tron.



HE WASN'T THERE EITHER! ↑

PASSING SHOT

Image Works

Anyone for tennis? You cannot be serious man! This is an excellent conversion to the Amiga of the Sega coin-op simulation. The really crucial graphical feature of any computer ball game played in 3D, has to be the ability of the player easily to perceive just where the ball is in the air at any time. Well, this game has just that, I must say that it is

"You will more than enjoy this game, you will love it!"

very easy to judge the ball and makes playing Passing Shot all the more enjoyable.

I suppose that the sport of tennis has quite a lot to answer for in the world of computer games. I remember about fifteen years ago, the very first games that simple computers generated were of the 2D tennis "Ping Pong" type. Passing Shot bears only a slight "passing resemblance" to its predecessors.

More recent 3D tennis simulations, in particular there were quite a few for the C64, all suffered from the inability to judge correctly the 3D flight of the ball easily and so spoiled the enjoyment of the player. You will more than enjoy this game, you will love it!

There is a single player game where one plays against the computer, or a two player game of doubles where both players play as a doubles team also against the computer.

So as to make it quick and easy to progress, you play only the final set in any match. When starting, you may choose one of four levels of difficulty, each level takes you to a different location in the world and playing on different court surfaces, such as clay

or grass.

The view of the court when serving is from behind your baseline, this changes once the serve has been hit to an overhead view. This aspect is similar to Microprose Soccer or Speedball. Those of you familiar with these games will have no difficulty getting used to this overhead view.

You have quite a lot of control over the racquet head when striking the ball. There are four types of strokes, flat, slice, topspin or lob. Passing Shot follows all the normal rules of tennis and incorporates all the usual features, double -faults, body touches, direct returns, aces, service aces etc. You are required to reach six games to win the match, this puts you through to the next round taking place at another location around the world.



Rather good digitised speech samples call out the faults like "double fault" or "out"...The ball was in man! There's no arguing with this game. On the bad side, there is a mistake in the program, if your first service goes into the net you will loose the point so watch out! I wish that it was possible to play singles against another friend rather than as a team.

The graphics are good, the sound isn't bad either, the playability really makes this program great. Most of you will be able to progress through to the tougher stages early on. The play gets faster and harder but with practice you can get to the top.

I really enjoyed playing Passing Shot, I hope you will too, let's end the domination of Becker and Graf!

B.C.



Graphics: 7 Sound: 6 Playability: 8
ABSOLUTE VALUE: 7 Price: £24.99

Mr Heli

Firebird

Despite the success of R-Type, Irem have remained a relatively small player in the coin-op world. They have yet to come up with anything to beat R-Type, but Mr Heli still proved very popular with a modest number of arcade-goers. The Amiga conversion has arrived via Probe.

The ecological balance of a once green and pleasant planet has been disrupted. An evil scientist calling himself "The Muddy" is behind it all, and the Cosmic Heli Patrol have sent you on a mission to restore order. This Muddy guy is a feeble coward, and he doesn't kid himself that he is any Rambo. That is why he has built himself a robot army to defend against any interfering do-gooders. Fortunately, the

"Mr Heli is a helicopter gunship which pilots itself and comes fitted with three weapons systems."

Cosmic Heli Patrol have strong counter-measures: you. Mr Heli is a helicopter gunship which pilots itself and comes fitted with three weapons systems.

Muddy has sent out fleets of mobile droids and set up anti-aircraft guns all over the planet. The floating platforms and narrow tunnels make avoiding the plentiful flak that bit harder. The best way to cut down the amount of missiles flying through the air is obviously to take out the launchers. An unexpanded Mr Heli is equipped with both an upward and forward firing cannon, so there is always sufficient firepower for a fighting chance of survival. You also get a supply of grenades for bombing ground features. The crumbly rocks found all over the multi-directionally scrolling lands often conceal

valuable crystals. These can be collected and traded in for extra weapons.

The levels combine push-scrolling with forced-scrolling sections, so there is also the occasional danger of being squashed between the scenery and

"The whole thing has a more claustrophobic feel to it than the coin-op due to the reduced scrolling window."

the edge of the screen. The whole thing has a more claustrophobic feel to it than the coin-op due to the reduced scrolling window. It's also slower and a lot less fluid than I had hoped for. On the good side, most of the graphics are neatly drawn and very colourful,



fairly accurate copies of the arcade machine's. Sound effects are good and zappy, though a little lacking in variety, and the music suffices.

In general Mr Heli's difficulty is well graded. It is quite easy compared to most shoot 'em ups, which is no bad thing as it will appeal most to younger players. Technical standards mean a lot in a shoot 'em up, and Mr Heli cannot match those set by the Amiga versions of R-Type and Xenon II. Gameplay is more sluggish and less frantic as a result, but looking on the bright side, that could be a blessing for less experienced joystick jokeys. It is a pleasant little game, but unless you can afford both, my vote has to go to the Bitmap's Xenon II.

T.H.

Graphics: 6 Sound: 6 Playability: 6
ABSOLUTE VALUE: 6 Price: £24.95

Dynamite Dux

Activision

They may look ever so cute and cuddly, but when their best chum was whipped away to the lair of some evil wizard, Pin and Bin turned nasty. No-one kidnaps these ducks' friends and gets away with it, as that old meanie was about to discover.

It just happens that the two heroes are boxing champs, so they are not afraid of a bit of fisticuffs. If you thought ducks were a strange choice for the central roles, take a look at some of the enemies. As you waddle from left to right along the scrolling levels, your first encounter is with a pack of dis-

"Mid-level and end of level monsters take the biggest toll on your lives, and vary from rockmen, to fire-demons and Chinese dragons."

embodied dog heads. These are pretty weak, and a biff on the nose is enough to put them out for the count. A short way on, the dog heads are joined by gangs of bouncing moose heads. The more tightly packed groups can be taken out in one go with a super-punch. Hold down the button and your on-screen persona winds up a massive hook, which



destroys anything unlucky enough to be on the receiving end.

Further on, the attacks become too intense for even these two unarmed ducks. Not to worry though, as there are plenty of rocks, bazookas, bombs and

water-pistols lying around. Supplies of each are limited, but as one runs out, another usually presents itself. The homing-missile launcher is one of most effective, with the flamethrower coming a close second. Mid-level and end of level monsters take the biggest toll on your lives, and vary from rockmen, to fire-demons and Chinese dragons. Through the levels, the scenery changes from cities to jungles and so on, but the layouts themselves are only slightly altered. Later on, the enemies start using missile launchers, and some extremely irritating gophers keep popping up from underneath you, relieving you of a few more energy units.

Everything moves smoothly enough, including the scrolling. The sprites are basic but colourful, but the backgrounds could be more convincing. There is a slight problem with occasionally unresponsive controls, but on the whole it plays well. What it lacks however, is excitement. It seems to me that an arcade game that generates no excitement is a waste of time. The continue play feature can encourage lazy playing, as you know you have still another credit or two in hand. Of course that is your decision, but the plentiful stock of lives and untaxing gameplay means you can lose enthusiasm half way through a game. If all you want is simple, uncluttered gameplay, or you're into the coin-op, give it a chance. Otherwise, your money's better spent elsewhere.

T.H.

Graphics: 6 Sound: 4 Playability: 5
ABSOLUTE VALUE: 5 Price: £24.99

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POPULOUS PROMISE

Electronic Arts

Bob Collyer loves playing God...again

The production team at Bullfrog have not rested on their laurels after their chart topping success recently with *Populous*. Far from it, they have been very busy creating a new supplementary Data Disk called "The Promised Lands". The resulting program gives an existing owner of *Populous* the chance to play at being God over even better landscapes and five different populations for only £9.99.

The original game has been with us now for just a few months. It was heralded then as a completely new concept in computer gameplay, as a 'Divine Being', you had complete control over your flock of followers. If you wanted to, you had the power to create natural disasters anywhere in your world taking the form of earthquakes, floods, swamps or even volcanoes that would make it extremely difficult for your opposing Deity to establish his colonies of followers.

On the other hand you had the ability to flatten vast areas of land that could be cultivated and built on making it ideal for your followers to prosper. The masses could be directed in several ways, either to establish settlements or make a pilgrimage to your Papal Magnet. You could make all your walkers gather together making them stronger or send them



out to battle with opposing walkers that stray into your area.

Once you gain the power, you may produce fighting knights that will go straight out to battle. These fierce fighters will go directly to your opponents lands and kill walkers and burn their houses (sounds just like English football fans to me!). These knights have the ability to make you the one and only ruler of the world, so their job is to cause complete destruction to your opposition until they are completely annihilated. (World War II put an end to the similar idea someone else had 50 years ago.) Maybe if Amigas had been around in those days Hitler might have been content with *Populous* and the Promised Lands Data Disk.

There are five new landscapes and five new sets of populations on the data disk. To use them is easy as all you have to do is choose "Custom Game" and "Paint Map", you originally had just landscapes 1-4, but you now have the extra choice of landscapes 5-9. Each new landscape has different features, populations and buildings whereas the original *Populous* kept the same people and buildings, only changing the types of landscapes and features.

The Promised Lands consists of firstly 'The Bit



US - THE ID LANDS



Plains". As you would expect this landscape contains features all about computers. The basic landscape is made up of green lined computer paper with punched sprocket holes. Your Icon is a Mouse, your people are Bugs, buildings are different types of computers and the flags contain Commodore or Atari logos. Landscape features are made up of disks, pencils, mugs of tea and cigarette stubs.

There are around 500 "worlds" in Populous to complete. The Promised Lands uses the same landscape names in the conquest sequence, though they are much tougher to complete now! Some of the tactics you were also used to using may not be the best, therefore different strategies are called for.

The landscape called "The Wild West" has an Icon of a Sheriff's Badge or Indian Totem Pole. Buildings range up from tents to strong wooden forts. Your people are, you guessed it, Cowboys and Indians.

Blockland is a complete world made up from pieces of Lego. The buildings are brick and range up in sizes to proper castles, your people are little Lego men. There are Lego trees and gear wheels for rocks.

My favourite landscape is called "Silly World" which has a chequered landscape that undulates creating a beautiful looking base. Your followers are all little red or green men, they build futuristic looking houses that range from glass pyramids to chromium plated castles.

Lastly there is "Revolution Francaise". Here you have little red or blue soldiers, their two Icons are either the Guillotine or what appears to be Joan of Arc at the stake. These people build up houses with a rather French style of architecture ranging from small maisons to circular turreted French castles.

When it first came out I found Populous be great fun to play. I have since spent many hours making the world a better place to live in! If you also already own the game and find it tremendous fun then you will find The Promised Lands even more fun. It is great value and an essential accompaniment for your omnipresent omnipotence.

B.C.

Graphics: 9 Sound: 9 Playability: 9
ABSOLUTE VALUE: 9 Price: £9.99



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F-16 Combat Pilot

Digital Integration

Since 16-bit microcomputers became commonplace, there has been an upsurge in the availability of "simulation" type software. Nowhere is this more apparent, than in the field of true flight simulators. Far be it from me to decry the efforts of the people behind the 8-bit simulators, but many were held back by limited hardware.

Perhaps the first "true" flight simulator was Microsoft's Flight Simulator on the IBM PC, though sold under the Microsoft label, it was really created by SubLogic. This has now been revamped into Flight Simulator II, converted to the Amiga, and very impressive it looks too. What it lacks is an exact simulation of modern combat; the World War I Ace option is pretty but too tricky for most people. The authors of FS-II have since released Jet - their interpretation of modern combat - but this, in my view, fails to hit the mark.

Next up came Interceptor, written specifically for the Amiga. This is a game Jay Miner is rumoured to play. Where Interceptor scored most highly was its seat-of-the-pants appeal. For the first time, the player got the chance to pilot an F-16 in "real life" situations. Excellent graphics and superb digitised sound added realism; and thus the new wave of flight simulators was born.

As history has shown the F-16 multi-role fighter, has proved an ideal basis for thrilling simulations. Then up came Falcon, which proved realism did not



have to be sacrificed at the expense of good gameplay. Nevertheless, Falcon still features some of the beauty effects - like external views - games players demand.

But now arrives F-16 Combat Pilot - and a new age has dawned. Out: the flashy external views. Out: the options for less realism. And eliminated too, is the convenient autopilot cop out. All these have been replaced by a game which ceases to be a game any longer - it took over 9 man-years to program. You are about to enter the world of the F-16 Combat Pilot where only the fittest will survive and death is a very permanent end.

The strength of the game lies in its close links with reality. Like Falcon for instance, you can select a weapon configuration to suit the needs of a particular mission, or, leave it to the ground crew. Missions are planned and controlled from the Tactical Air Command (TAC) computer back at base. Even friendly airfields are prone to attack from enemy bombers and interceptors.

Combat Pilot is brimming with many more features than space allows me to describe here, so I will concentrate on the cockpit since you will spend the most time here. The cockpit (or office) is modelled on the interior of a real F-16C - the single seater variant of the aircraft. In front are all the usual instruments you would expect - head-up display, compass, radar, artificial horizon etc. - plus three multi-function



monitors.

It is these monitors that help give the game its appeal, since they are unlike anything yet simulated on a home micro. Each has access to more than ten different displays! These are: three air-to-air radars; two ground-to-air radars; a moving map; weapons status; digital artificial horizon; primary flight data; and finally, infra-red targeting.

Outside the aircraft, the world is portrayed in much the same way as most recent flight simulators - as solids. However, only four views are possible from inside the cockpit; these doubling to reveal other indicators/warning panels. It is worth mentioning though, some aspects of *Combat Pilot's* world are more detailed than in other simulators. A few are even animated like the SAM missile launchers.

Right from the word go, *Combat Pilot* feels like the real thing. The game is supplied on one disk accompanied by a large manual detailing everything you need to know. I should point out though in comparison to say, *Falcon*, DI's presentation of *Combat Pilot* is not all that impressive. That said, much more effort has been put into the game itself. The whole thing is so intricate it defies accurate judgement in a 15 minute demonstration - even the demo supplied is only average when compared to a real session.

The best feature of the game as far as the world is concerned is when you undertake missions at night. Now the cockpit is bathed in an eerie green and red



glow. All outside is dark except where the HUD is illuminated by an infra-red camera. Only now does the real attention to detail becomes apparent - as you fly past towns, bases etc. you can see the lights in the

"tank squadrons can be defended by heavily armed gunships - and they are all too easy to miss."

buildings! Airfields too, can be identified miles away by their landing strips.

This is where the infra-red display and missile targeting system LANTIRN comes into real use. During the missions you can fly in just under enemy radar, switch on the ground tracking radar and



identify the hot signatures of your chosen targets. Now you can unleash death on the enemy from a safe distance - but watch out for the flak if you get too close. In Combat Pilot, tank squadrons can be defended by heavily armed helicopter gunships - and they are all too easy to miss.

If you do manage to make it back to friendly territory then there comes the challenge of getting the aircraft down in one piece. There are three ways of doing this - and none is easy! The first is to radio the tower to check everything is rosy down on the ground. (You cannot land at an airfield which is under attack.)

Next you can request a Talk-Down landing or Ground Controlled Approach. Here the tower gives you instructions on speed, rate of decent and bearing to ensure you land safely. To make life easier you



have the option of switching on autoland, provided you are in range of the Instrument Landing System (ILS). Not all airfields have ILS and even then it does not always work! The toughest option is to complete the landing all on your own without any assistance whatsoever - you have my sympathy.

Mission freaks may initially wonder what Combat Pilot has to offer. All the mission screen appears to offer is five possible missions - covering all roles of the F-16. However, if you manage to complete all five missions - without dying once - you are rewarded with a chance to enter Operation Conquest. This is when it gets hairy!

"DI's Combat Pilot is without any shadow of doubt the most rewarding of the current sweep of air combat simulators and by far the most challenging."

Operation conquest is the final battle. You get the chance to control a whole squadron on your own. You give the orders, you make the decisions and you fly some of the sorties yourself. Operation Conquest is a simulation of all out war and it feels very realistic. Perhaps the best part is if you get shot down you do not lose as such - you only lose one aircraft. Even though new aircraft are being built all the time you can still run out and lose.



At the end of Operation Conquest - and this takes many hours of flying and a lot of strategy - assuming you win the battle, you will be offered the chance of promotion to another unit. Not only does the new game get even harder - as the enemy strengths increase - it is fought in another area of the map; in a different part of the world so-to-speak.

I have played Combat Pilot for more hours than any other game I have ever had - except for Sentinel. DI's Combat Pilot is without any shadow of doubt the most rewarding of the current sweep of air combat simulators and by far the most challenging. The twin joystick option adds to the feel and it even includes a two player serial port option.

If I have to criticise it, I must mention the sound which is poor by Amiga standards; the graphics too are largely an ST port. Also, the manual based protection system goes a little too far - it asks for a



code every time you take off! Nevertheless, this was a game well worth the wait, and thoroughly deserving £25 of anybody's money. Buy it, play it, enjoy it - but remember too: "This time it's for real."

M.S.

Next month, we will publish the first concise player's guide to F-16 Combat Pilot.

Graphics: 9 Sound: 7 Playability: 10
ABSOLUTE VALUE: 10 Price: £24.95



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If you are going to release a vertically scrolling shoot 'em up today, it has got to be something special. Just another unoriginal zapper in the Xenon mould would have little chance of success. What Amiga gamers want is an arcade machine in their own home. Bar the coin slot, Xenon II gives you exactly that.

"Crispin, the alien shopkeeper, is prepared to buy or sell weapons, as long as he makes a profit."

The plot concerns the Xenites, the race you defeated in Xenon. One thousand years later, they have planted a series of time bombs throughout history. Time itself will be thrown into chaos unless something is done, and of course you are just the man for the job. Your mission is to pilot your ship through each time zone, from the beginnings of evolution to the android future. Radiation from the bombs has mutated the poor creatures of these worlds into savage killers, so your only option is to shoot the lot of them.

It all starts off quite tamely. A few waves of conventional aliens swirl about, whilst a couple of speed-up tokens drift across the screen. As the genre dictates, shooting an entire attack wave releases a cash token. Half way along the current level, and again at the end, you pay a visit to the



shop. Crispin, the alien shopkeeper, is prepared to buy or sell weapons, as long as he makes a profit. If you have picked up an expensive add-on along the way, but would really like to pool your resources for a deluxe alien-liquidizer, selling-up can be a good idea. In addition to these, other weapons found floating around the levels can be rounded up for free.

Predictably, the aliens step up their tactics soon enough. The bigger enemies can take a number of shots before exploding, but yield bigger cash tokens. Worms made from loads of tiny segments squirm around some of the game's slimier corners, before returning to their refuge via tailor-made pipes. The giant crustacean lying at the level's end is superbly drawn and coloured. As you move up to take a closer look, it whips out a tentacle, wiping out the unwary player. Fry its eyeball and the screen is filled with



delicious little cash tokens.

Compared to what follows, level one is nothing. Further levels harbour some fiendish traps. The reptilian heads on the side walls can go unnoticed in the frantic zapping, until they suddenly shoot out on their extended necks, chomping insanely at the air. Other gruesome surprises include the exploding pods, which send shoals of crazed fish floundering around the screen. For a lot of the game, the parallax scrolling is purely for show, but it does come into play if you buy a "dive" token. This allows you to dive down into the screen for a short time, away from the perils above.

When someone sets out to produce a sequel, it is standard practice to note everything the consumer disliked about the original, and scrap or improve the offending points. However, as there was barely a



Enormous graphics, displayed on similarly gargantuan monitors have been the hallmark of this years coin-ops. That's fine if you have thousands of pounds to spend on hardware. Mimicking that on the comparatively paltry Amiga can pose a few problems. Technical standards have come on a lot since Xenon, which conceded the right third of the screen to a static status panel. Software sprites were used for greater flexibility in numbers and colours. Once again with Xenon II, software sprite routines have been used, allowing immense fleets of aliens to attack simultaneously. On top of that, the bulky score panel has gone, leaving a full NTSC screen for the game itself.



bad word said about Xenon, the Bitmap's must have wondered where to start. Instead they seem to have kept an ear to the ground regarding the whole shoot 'em up scene, and have included shades of just about every popular blaster. One of its best points is that

"the balance is almost perfect; loads of aliens countered by loads of super-destructive firepower."

you get to keep your weapons after dying. The omission of that seemingly insignificant feature would have made the game just too difficult. As it is, the balance is almost perfect; loads of aliens countered by loads of super-destructive firepower.



Then there is the music. The Bomb The Bass piece playing over the title screen is brilliant. It continues through to the game, although it does lose out on a track or two as you play. Alternatively you could just switch to sound effects during the game.

Xenon II is an amazing game. Graphics sound and gameplay are all superb. It is hard, but not too hard, and it is damned good fun! It won't have the staying power of a classic sports sim, but if it's a shoot 'em up you want, you can't go wrong with Xenon II.

T.H.

**Graphics: 9 Sound: 8 Playability: 9
ABSOLUTE VALUE: 9 Price: £19.95**

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ASTAROTH

Hewson

Astaroth is an unusual being. Napalm cannot harm her, bullets will not hurt her, swords and knives slip as if by magic off her skin. The only weapon that has any kind of effect against this Angel of Death is the power of the mind. With the security of his world threatened, Ozymandias has no choice but to channel all his mental energies into Astaroth's destruction.

The journey takes him through deep, labyrinthine passages pitted with dangers and infested with Astaroth's minions. Impaling stalactites, energy-draining skulls, bats, scorpions and worms fall from the cavern ceilings. Beholders, harpies, tortured souls and fire elementals attack him from all sides.

Initially, Ozymandias' mind is pretty weak; he cannot do much more than dodge his enemies. His



over Astaroth's.

There's no denying that basing a game around mindpowers is an unusual idea. Unfortunately, the gameplay does not quite match up to the originality of that idea. Despite its references to mind games and telepathy, all Astaroth really amounts to is an average arcade adventure. The attractive graphics and psychedelic soundtrack are very impressive but there just is not enough variety to the gameplay to keep you hooked. One screen looks much like another and simply searching for the ten mindpowers does not give you enough incentive to go on. Unless you are absolutely addicted to arcade adventures, Astaroth probably will not provide enough substance to satisfy.

K.H.



mental agility can only improve if he collects the ten extra mindpowers which are hidden in large bell jars in remote parts of the subterranean complex. These include such abilities as pyrokinetics, telekinesis, shapeshifting and cryogenetics. In practice, these enable you (among other things) to move around more freely, see in the dark, change into a bird (useful if flying is the only way to get past an obstacle) and fire at or freeze enemies. You can switch between mindpowers you have already collected at any time although some only prove useful in specific situations.

The three guardians of the soul have to be defeated before you can get your hands on Astaroth. They are the Sphinx, a three headed hydra and the Marilith Demon. Unless you are in possession of the right mindpowers you will not be able to overpower them.

Make it to Astaroth's inner lair and the final showdown is depicted as a battle of the minds. Basically, it is a case of waggling the joystick as fast as you can until your mind scores a mental defeat



Graphics: 7 Sound: 6 Playability: 8
ABSOLUTE VALUE: 8 Price: £24.95

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Shadow of the Beast

Want a T-Shirt with your game? Tony Horgan says get Psygnosis' best yet...

Barbarian and Obliterator both showed how good an arcade adventure can look, but as you probably remember, the code behind the graphics did not quite come up to the same standards. They both looked great in still shots, but once they moved, the slow flickering animation came as a big disappointment. No such disappointments are in store with *Beast*, which looks even better on the move!

It is all about this poor mutation, who was stolen from his parents as a child. Then, he was a perfectly normal human baby, but the minions of the Beast had plans for him. A course of potions, consisting of

the blood of various rare animals, was fed to the child, who was gradually transformed into a hideous, but immensely powerful creature. For years he served the Beast as his warrior messenger, unaware of the events that had led to his current state. All was well, until the secret was leaked. That really got our hero's goat, so off he set to put an end to his evil master.

You begin in a picturesque, lightly wooded area of the country. Unlike most arcade adventures, here you get the choice of exploring either to the left or right of your start position. Which ever way you choose, you will be amazed at what you see as you



move. The entire background (and a little of the foreground) is split into numerous planes, each of which scrolls perfectly smoothly at its own rate. The result is a brilliant illusion of depth, from the pale moon in the sky, right up to the immediate foreground, with the central character set a little way into the scene.

Fancy scrolling aside, the opening stages play like a straight arcade game. Bats, monsters and boulders fly onto the screen, only to receive a punch in the face and fly off again. Once you venture through one of the doorways in the scenery, things take on a flavour reminiscent of a traditional adventure game. A snatch of text fills you in on the horrors that await you, along with a still depicting your surroundings. The next section loads in and you're off again. Down in these spooky caverns, the adventure element appears once more. An enormous creature blocks your way, and seems to be invincible. Could that orb in the hands of the fire-breathing demon be of any use?

All the time, the foul guardians of the Beast get ever more deadly. Most give you a fair go, but some



do have an annoying habit of popping-up from the ground unannounced. You start out with twelve lives, but these disappear at a hefty rate. Luckily there are small life-giving potions strewn about the game, some adding a couple of lives, some completely topping up your supply.

Equalling the standards of graphics and gameplay is the music. David Whittaker seems to be everywhere at the moment, but he has not skimped on his work for *Beast*. As you enter new locations, and even as the pace quickens with enemy ambushes, the music changes to suit the mood. Just how many pieces there are, I can't say, but if I tell you there is 900K of it, you should get the picture. These superb pieces tend to overshadow the sparse sound effects.

There are a couple of things I especially like about *Beast's* gameplay. The first is that it is not linear. You are not forced to tackle the onslaught from left to right, or go this way because the computer says so. The land, caverns and castles can be explored in almost any order you like. In fact, it is up to you to find out the correct order, as some places are only accessible if you've been somewhere else. The second point is the feeling of achievement and



progress you get after discovering a new area, which you know holds yet more graphical masterpieces.

There still remains the question of the pricing. Obviously the programmers have worked primarily on the Amiga, which does not present a huge market for the games sales. The inclusion of a free T-shirt does increase the value, as long as you want the T-shirt in the first place. This is obviously a method of increasing the package's apparent value, at the same time bumping up the profit margin. It may be that this is the only financially viable way of producing such a game, but all the same, £35 is, in my opinion, too much for a computer game. There is a paragraph in the manual stating that piracy levels may force the programmers to write solely for consoles. Priced as it is, I can see many more people turning to pirate copies of the game, simply because they cannot afford to buy the original.

I don't want to finish on a bad note, so if you have the cash to spare, you will kick yourself if you miss *Beast*. Another in the rare breed of "real" Amiga games, which actually does something worthwhile with all those extra chips. The best from Psygnosis without a doubt.

T.H.

Graphics: 9 Sound: 9 Playability: 8
ABSOLUTE VALUE: 7 Price: £34.95



Give it Some Stick!

Tony Horgan slates, rates and celebrates some of the joysticks currently competing for your cash

Wizmaster £12.95

If you like those control pads used by the games consoles, the Wizmaster could be just the ticket. A diamond-shaped pad on the left is used for movement, while a couple of independent fire buttons are located on the right, with the autofire in between. Two miniature sticks are supplied, which screw into the controller.

Although the direction controller is small, it's not small enough for accurate movement. Had it been more the size and shape of the Nintendo Game and Watch games, there would be no problem. The smaller of the two screw-ins is too small to create any leverage, and just makes matters worse. The longer options is more comfortable, but equally inaccurate. Despite their dead feel, the fire buttons worked fine. However, each time I tested it for precise control, as demanded in Kick Off, Super Hang On or IK+, the Wizmaster failed to make the grade. The inertia found in Xenon II tends to gloss over such faults, and with the autofire, the Wizmaster clawed back a few points. It would be far from my first choice, but it's worth a look for any fans of these console-type controllers.



Joyboard £24.95

Bells and whistles are in abundance on the Joyboard. For your money you get a stick, two fire buttons, an autofire

toggle, an autofire speed knob, a paddle/joystick toggle and two paddles.

It's a shame that paddles have been neglected by games programmers. Their potential for driving games in particular is rarely tapped. In any case, if you come across a game with a paddle option, you'll be glad you've got your Joyboard to hand. The variable autofire can be useful if a game blocks extremely rapid fire. The two fire buttons seem fine at first, but after extensive use they constantly get stuck down. The stick is fairly accurate, but travels a little further than is ideal. If your fire buttons hold out, the Joyboard will make an excellent buy, and if not, I'm sure Euromax would not hesitate in replacing it.

Professional Autofire £18.95

Two microswitched fire buttons at the front allow for right or left handed use. The stick is also microswitched, with a small amount of travel. Protrud-





its stronger points. Primarily designed for table top use, it has the advantage of leaving one hand free for keyboard operation/kebab guzzling. However, pick it up, and the turbo vents that once looked so attractive, are now a pain in the neck, as they cause the base to drop off exactly where you need to grip it. Not a stick for anyone who demands precision, but flight fanatics may find room for it.

Speedking £14.99

The stick responsible for bringing the word "ergonomic" into many a kid's vocabulary is still a favourite now. Designed to be held in a cupped left hand, with the right hand operating the short stick, it houses an autofire at the rear.

There are two main problems I find with the Speedking. Rapid manual fire can give your index finger cramp, but this can be countered by the autofire. The other concerns the stick, which although short, manages to be inaccurate when it comes to diagonals. Having

ing from a rear corner is the autofire toggle.

This is my fave by far. Its fire buttons give excellent results, and the stick is superb. Diagonals are no problem, and the stick always does what you tell it. On top of that, the whole thing is very sturdy. I've had my vurrent Professional Autofire for around a year, used it almost everyday of the week, and it's never let me down. It's still as good as the day it was made and if anything its even better now it's broken-down.

Quickjoy III £9.95

One of the cheaper sticks around, the Quickjoy III is also one of the more stylish (and before you write to com-



plain, Mrs Green of Southampton, that comment has nothing to do with the stick's phallic lines). Two microswitched fire buttons are located at the top of the shaft, which itself is also microswitched.

The fell of the stick is very sluggish, reminiscent of a sink plunger in a bowl of jellied eels. Precise control is not one of

grown up on the Kempston Competition Pro, this completely alien design has never agreed with one of those ergonomic keyboards. Newcomers to computer gaming often find it more manageable than the traditional sticks. Not my jumbo mug of tea and biscuits, but it's definitely worth a try.

T.H.



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INTUITION IV: GADGETS PART 2

*Mike Nelson continues his series on
Intuition gadgets*

We have described how to design your own gadgets and now we shall take a look at incorporating those hard-drawn icons in your programs. Once all the images have been defined, we do the Gadget structures. These follow the usual pattern for Intuition data structures and, we hope, are becoming more familiar as you use them. There are several common features displayed by the various structures for menus and gadgets including the various sets of coordinates, some of the flags used in signalling events, and the reliance on linked lists to ease the set up part of the proceedings.

THE GADGET STRUCTURE

As usual, these are declared at the top of the program and the compiler is left to sort out the precise details of what goes where. Before considering the different types of gadgets included this month, I shall first discuss the Gadget structure, found somewhat expectedly, in the intuition include file. The first member is simply a pointer to the next gadget in the linked list. This is a handy way of doing things since all we have to do to add a list of gadgets as long as your arm (or even longer if need be), to the window, is to include a pointer to the first structure in the NewWindow structure.

Next, we have the usual coordinates to map out the select box, corresponding to the area on screen where clicking the left mouse button will activate the gadget. These are actually more complex and hence versatile than they may

first appear. But surely coordinates are coordinates; numbers specifying a distinct displacement from somewhere? Indeed they are but Intuition is very flexible about the where, allowing you to place gadgets in the border areas of windows and automatically moving them around when the user re-sizes the window or moves it about. All the gadgets in the program below reside in the comfort of the outskirts of the window, either in the drag-bar or along the bottom. This is by no means the only place for them but in the context of the program it would have been rather inconvenient to place the gadgets in the drawing area where all sorts of nasty things could have been drawn over them!

The next field is the Flags member. This is used by both your program and Intuition as a kind of information exchange. It contains details of how the gadget should be drawn initially, and highlighted when selected - whether an alternative image should be drawn, the colours changed, a box drawn around it or, easiest of all, nothing. In addition to all this, the details of how you wish the coordinates above to be interpreted are given. Because you don't know the size of the window from one moment to the next (users are able to re-size windows) you can specify which border the coordinates are to relative to. For instance consider the first gadget in the list, "Stretch". I took the idea for this from WordPerfect, the only Amiga word processor with street credibility as standard.

Selecting the gadget will enlarge the

window to fill the screen and also move it to the top left. Clicking again will send the window scuttling to the bottom right, a mere shadow of its former self, thus saving you doing a re-size and drag maneuver yourself. Trivial perhaps but it is sometimes useful.

The gadget lives in the top right of the window, next to the depth arranging gadgets. The select box is always 80 pixels from the right edge of the window, zero pixels from the top, is 29 pixels wide and 10 pixels deep. The flags variable for this has GADGHCOMP, GADGIMAGE and GRELRIGHT set. In English this says: "When the user selects me, use the other colours to highlight this fact. To draw me, use the Image structure pointed to later on and render the icon relative to the right side of the containing Intuition element (in this case a window, but it could be a requester)".

On the other hand, the colour gadgets are in the lower border of the window and so have GRELBOTTOM set instead of GRELRIGHT. Note that if neither of these flags is set, Intuition assumes that the coordinates are relative to the top left of the window/requester. As if this was not enough, it is possible to set flags to specify that the width and height of the select box are also relative to the size of the window. Thus if the window is increased in size, so does the gadget select box. This is most useful in proportional gadgets, a subject we shall tackle in a subsequent article on requesters. Finally, the toggle on/off and "Gadget disabled" status of the gadget is also represented in this

continued on page 104

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continued from page 102

variable.

The next field is yet another set of flags, called Activation to distinguish them from those above, although their function seems to follow on quite nicely. Most of these flags deal with the events after the gadget has been selected, and also set up the type of information passed via the IDCMP. A TOGGLESELECT gadget exists in one of two states, on or off to be exact. We have used this feature for the draw mode part of the program. This mode must be either "draw free hand" or "draw lines" and so we have programmed these gadgets mutually to exclude each other (note that this is not yet supported directly by Intuition).

GADGIMMEDIATE and RELVERIFY are concerned with the IDCMP messages, or, more specifically, when you get to hear about them. Setting the former will cause Intuition to send a message as soon as the user clicks on the gadget, without waiting until the button is re-

"a drag bar requires that the first click sets things in motion and a release to stop things, hence the need for GADGIMMEDIATE."

leased. Release-verify on the other hand ensures that the user selected the gadget and released the left button. This is a kind of in-built safety mechanism to give the user one last chance to cancel the operation about to be invoked by simply moving the pointer off the gadget select box. Try this with a system gadget. Conversely, a drag bar requires that the first click sets things in motion and a release to stop things, hence the need for GADGIMMEDIATE.

FOLLOWMOUSE will give you mouse movement information as long as the pointer does not waver off the select box of the gadget. The sizes of the window borders can be adjusted to cater for larger gadgets using the BORDERFLAGS. There are various other activation flags dealing with requesters and string gadgets which will not be considered until the appropriate article.

The next field is the GadgetType. This must be set to any one of BOOLGADGET, STRGADGET, PROPGADGET, GZZGADGET or REQGADGET as appropriate.

GadgetRender contains a pointer to either an Image or Border structure. These were both covered in the last article and are contained in the file image1.h which was also printed last month. If you want to change the way the gadget looks when selected, you place a similar pointer in the next field SelectRender. This is possibly the most

emphatic way of telling the user something has been selected, short of passing a small current through the mouse buttons! You can also specify text to be printed via the next field - GadgetText. This is simply a pointer to an IntuiText structure.

MutualExclude is not currently supported by Intuition and so this field is ignored. Note that you should not use it for your own data simply because Intuition is not interested, as future enhancements to the system will probably use the field and so your programs will undoubtedly awaken the Guru. You have been warned.

SpecialInfo will be examined later as it pertains to string and proportional gadgets.

The designers of Intuition have been kind enough to allocate the last two members of the gadget structure for our own use. The main GadgetID variable can be used to provide a unique value, identifying the gadget when the IDCMP reports a selection. This is used in the example program and it will be noted that the GadgetIDs for the colour select icons actually correspond to the registers they represent (i.e. zero to three).

SETTING UP THE DATA STRUCTURES

The usual chore of defining lots of macros must be performed first to ensure that the listing is readable. Hopefully most of these are self-explanatory. The GadgetIDs mentioned above are arbitrary numbers, chosen largely by the order in which we included them in the program. Note that the system gadgets are not reported in the same way as your application gadgets and so you are free to start your numbering at any point. We have also used macros for some of the long sequences of flags as it saves typing them out in each structure!

The gadget structures have been discussed previously but note the linked list again appearing. The Stretch gadget is slightly special and is added in later on in OpenStuff(). DrawFree is the first gadget in the list and a pointer to this is stored in the FirstGadget field of the NewWindow structure. Thus, as soon as we call OpenWindow with a pointer to NewWindow, the list of gadgets is submitted one by one automatically for us.

THE PROGRAM PROPER

The global variables are kept to a reasonable minimum and are set up with the default drawing mode to be "FREEDRAW" and default colour to be "COLOUR1" (white). The main() function is kept to a bare minimum as all the processing is handled from the doIDCMP() part of the program.

OpenStuff() does the usual task of opening up the Intuition and Graphics libraries so we can access the routines within to open windows, draw lines etc.

In addition to this we also call AddGadgets() to submit the "Stretch" gadget. The reason for this is related to the position of the icon. It overlaps the drag bar and Intuition always puts its gadgets ahead of yours in the list. This means that if you submit the "Stretch" gadget in the list with the others, it is "superimposed" on the drag bar. The image is shown on screen but when you try and select it, because the select boxes overlap, Intuition gives priority to the drag bar as this is before "Stretch" in the list. You can hack your way around this by submitting "Stretch" with an argument of zero for its position in the list, thereby guaranteeing it is before any of the other gadgets. This seems to work quite well, with the caveat that the gadget gets "ghosted" when the window is inactive. I do not know if this programming is completely within the doctrines of the Amiga and may indeed cause R.J. Michal to strangle his mouse in disgust, but it works! Needless to say you must ensure that none of your gadget select boxes overlap as this may confuse the user of your program.

In order to get Intuition to re-draw the gadgets, you call the function RefreshGadgets(), but use this sparingly as it can take some time to run if the list of gadgets is long. You can specify where in the list Intuition should start to refresh and to minimize the time spent doing this try and put the most refreshed gadgets towards the end of the list.

CloseStuff() is pretty much as you would expect by now with the addition of a call to RemoveGadget() to get rid of "Stretch" before closing the window.

THE IDCMP AND GADGETS

The function doIDCMP() is the real work-horse of the program. With a considerable amount of help from Intuition, all of the input/output is handled here so it is worth taking a close look at how this is accomplished.

Firstly then, a brief overview of the requirements for our simple paint tool. Each time an event is sent to the message port, the program resets the limits for drawing, in case the user has re-sized the window. This prevents those inconsiderate ROM drawing routines from plotting over our nice gadgets. The variables are used in the doDraw() and doLine() functions at the end of the program.

The IDCMP is initially set up (in NewWindow) to send messages for CLOSEWINDOW, GADGETUP (i.e. selected), and MOUSEBUTTONS events. The latter is a new message for us, being sent whenever the left mouse button is pressed or released. We use this to turn on (and off) the drawing but more of that later. A GADGETUP message tells us that the user definitely selected one of the gadgets. The function doGadgets() is called with a pointer to the Gadget

continued on page 110



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NETWORKING THE AMIGA

Anthony Mael examines an exciting new development for the Amiga from a company with seven years experience in Commodore products

This summer has seen the release of a networking product for the Amiga, a range of Ethernet Boards designed and manufactured in the UK by HYDRA SYSTEMS. The company has been networking Commodore products since 1982, and HYDRA became the de-facto standard for LAN connection to any of the Commodore range. This new generation of boards comes fairly late to the Amiga marketplace, rocky territory for third party developers, but with growing acceptance of the Amiga as a viable business and professional tool, and a world total of two Amiga ethernet vendors, HYDRA SYSTEMS feels comfortable with its market proposals.

With exciting products such as TCP/IP already beginning to emerge from software developers who have been working with Beta versions of the hardware since early this year, the connectivity question that has dogged potential Amiga buyers and systems constructors alike can now be firmly answered. AMIGANET employs the industry standard Ethernet architecture which occupies the high ground in the PC network world. AMIGANET is compatible with Ethernet Version 2, and is fully compliant with IEEE Standards 802.3 Types A and B, which refer to Ethernet and 'Cheapernet' respectively. Cheapernet uses a much cheaper form of coaxial cable (hence the name), resulting in dramatically reduced installation costs. Further, HYDRA SYSTEMS told *AM* they intend AMIGANET to remain the least expensive high-end network option for the AMIGA.

The Ameristar Networking System from the USA has been available for some time, it is a product aimed very much at the high-end market, running on a SUN NFS (Networking File Server) Network. It has come in for some criticism on the basis of price, (being locked into the SUN NFS architecture), the fact that there has been no Amiga-to-Amiga communication possible, and for Amer-

istar's lack of support for software developers. Consequently, there are few Ameristar installations in the UK.

HYDRA SYSTEMS saw the need to address these problems directly; their seven years experience with CBM products, providing real-world solutions via Networking at the tough end of the market, had already brought them to the Amiga from a different direction.

AMIGANET evolved into the only Ethernet system to offer Amiga-to-Amiga (peer to peer) communication, Amiga File Servers, and a cost-effective A500 version for education. The Operating System was crafted by Perihelion Software in the UK, widely acknowledged as the creators of AmigaDOS.

The AMIGANET design philosophy adopted at the outset was to enable virtually instantaneous movement of data of varying types between any of the Amiga products. Image movement between Amigas naturally has a high priority, and AFS, EMAIL, and the TUBE, a high speed data exchange interface, are provided along with a number of other network services. The ability to share files being fundamental to modern database design, any AMIGA on the net can, subject to access permission, access any other screen, storage device or printer on the network, as if it were physically attached locally. All of the functions of the network are usable from the Workbench or the CLI interface, or within programs.

AMIGANET OVERVIEW

AMIGANET Hardware is available in several forms, tailored mainly on the basis of end user cost. The fully loaded version, mandatory for any serious work (such as file service, or any high traffic centralised facility), has a 64 Kbytes of buffer memory, and a 16-bit data path, assisted by a DMA sequencer with a 16 Mbyte address range.

This DMA process is able to move data directly to or from any memory

HARDWARE



location in your AMIGA for example, directly into Video RAM.

To define the position of the AMIGANET Board in the hierarchy of networking hardware, for those of you who need to relate to horsepower, network cards usually boast 8 Kbytes of memory, an 8-bit data path, and no on-board DMA ability. 16 Kbytes is described as an 'Enhancement'.

For this version of the hardware, they have concentrated on technical elegance and delivered horsepower, rather than build cost. Notwithstanding, the maximum-spec. board has a base-line price £350; at the same time they offer detuned versions for cost-sensitive applications.

The base-line AMIGANET board, a low cost education special, has a similar fit to Novell, Western Dig. and other mainstream LAN cards. The mid-range board has 16 Kbytes, 16-bit paths, and DMA. All of the variants are available enclosed in an ABS injection moulded case in the style of the A500, for attachment to that computer.

AMIGANET O/S

There are seven services (so far) supplied as standard with AMIGANET. These include the data and time service, the screen communications service (a kind of chatline; dialogue-based communication), the AMIGANET File System (AFS) and a Remote Printer Handler. Other functions are Email, the TUBE (a high speed data exchange interface), and a Videopix Tube. You may have other services installed on your network such as a print spooler, or TCP/IP support, which will have their own documentation.

AMIGANET has been designed to cope with problems such as disconnection of the network cabling. If this situation occurs, a window will pop-up on your screen to announce this condition. You should examine the cable and connectors (and possibly the users) to make sure there has been no break in, or damage done, to the cable. When the problem has been resolved, network operations should continue from where they were interrupted.

USING AMIGANET

AMIGANET can be started in three different ways:

Starting the Network from the Workbench:

It is assumed that the Software is installed; to start using the network, a double-

click on the ANET Icon in the Workbench window, and then on the StarNet Icon when it appears. StarNet mounts and initialises all the necessary devices, checks the table of Users and their aliases, and activates the network board.

Starting the Network from the CLI:

You can start the Network from the CLI by using the command 'StarNet'. StarNet will be confirmed by the previously described message, which will remain on the screen until overwritten by CLI activity. This is useful for those who miss the twelve digits of the Ethernet address at Logo time, as you might need to use the address for mount listings.

Starting the Network Automatically:

The Network can be activated automatically at your site whenever you turn the computer on, or re-boot it, if you include the command 'StartNet' in your S:startup-sequence File.

Using the Date and Time Server:

AMIGANET operates a network-wide date and time service which can be accessed by any Amiga on the network. Its main function is to set automatically the time and date on machines that do not have real-time clocks. It also ensures that your site operations will be synchronised with the other computers on the network. To execute this function, you issue a special CLI command,

NetDATE, which is provided by AMIGANET.

Talking to Other Users on the Network:

AMIGANET provides a simple CLI command, CHAT, that allows you to send messages from one Network Site to another. This command uses the screen communications service of the target computer to display your message.

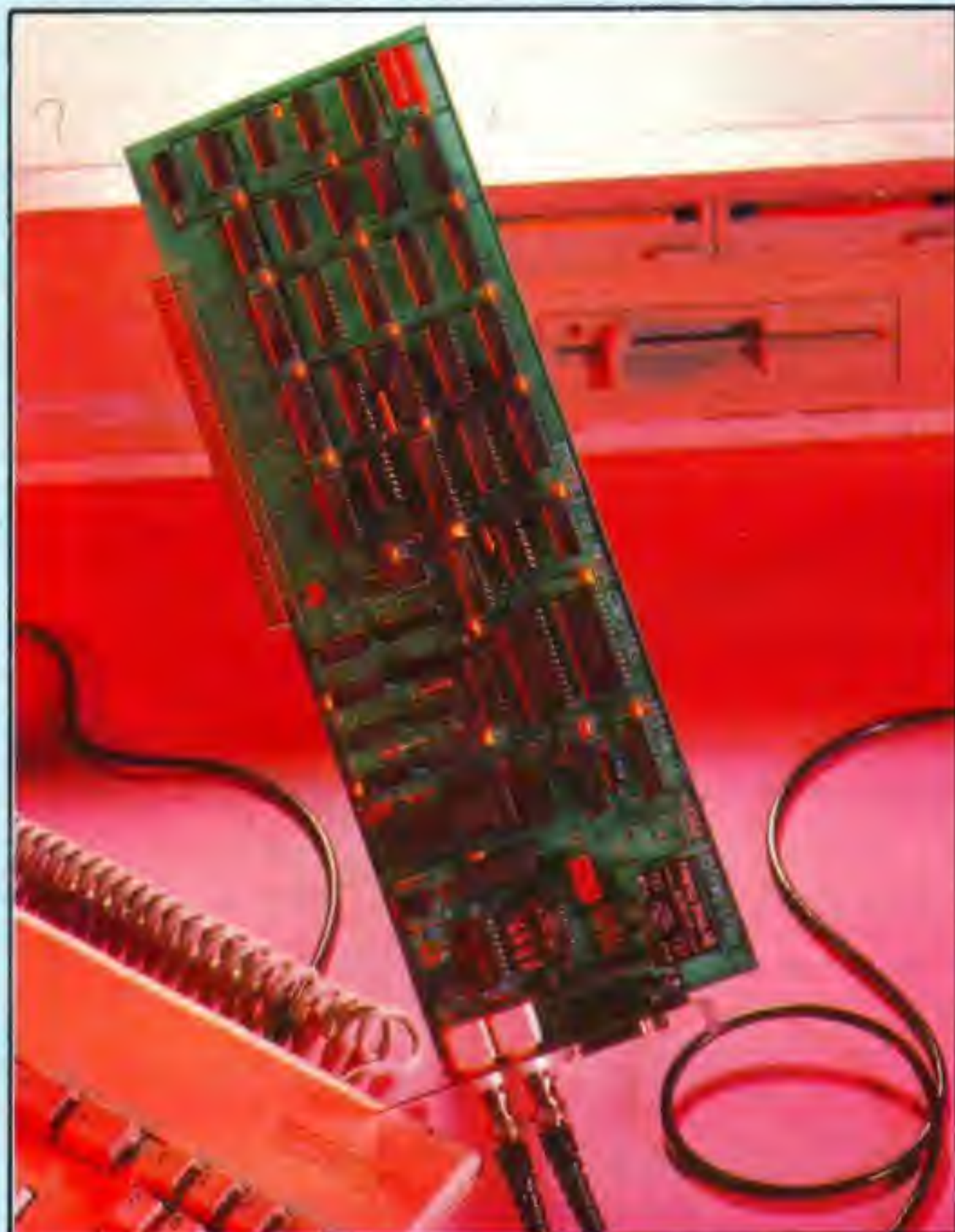
Sharing Files and resources Via the Network:

Users on the network can be allowed access to the disk drives of other computers, as if the disks were connected to their own computer. You will be able to access the Remote disk quite normally, that is, double clicking on its program files will run those programs in your Amiga. All the standard Workbench functions such as RENAME, DUPLICATE, and DELETE, are executable. You may also access a remote machine's parallel or serial ports, via the same structures.

A.M.

For distributor of user information contact: Hydra Systems, Red Lane, Kenilworth, England. Tel:(Int. +44) (203)-471111. Fax:473333.

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NETWORKS

With apologies to Derek and Clive... Networks come in all shapes and sizes, from the smallest Local Area Networks (LANs) to the largest computer systems in the world, where the CPU may be hundreds of miles from the nearest terminal. No matter what the size though, the principals of networking remain the same. Basically the CPU allocates small, priority based, time-sliced hunks to each task (terminal) or device (peripheral). The Amiga performs a similar job in much the same way. Internally, each CLI or task can be thought of as a job on a remote terminal. In practice each terminal gets a certain amount of CPU time and communicates over a hard wired system. The advantage of this is that many people can have access to just a few peripherals - thus reducing the cost. One common way of CPU-Task communication is the "Round Robin" system. For further information listen to Derek and Clive's Letter sketch 17 bit disks, 231+232.



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continued from page 104

structure of the selected gadget as the argument. To obtain this pointer, you look in the IAddress field of the IntuiMessage structure. We use the variable GadgetPtr for the pointer for clarity although it is not strictly necessary as you can pass the pointer directly in the function call - i.e. doGadgets ((struct Gadget *) message->IAddress);

The MOUSEBUTTONS event is trapped at the top of doIDCMP(). The Code field of this message contains the value of either SELECTDOWN or SELECTUP, depending on whether the button was pressed or released. This is very useful for this type of program since you don't have to process mouse movements when they are not relevant-

"We could specify in the NewWindow structure that we always want to receive mouse movement information but this is rather wasteful and anyway we wanted to demonstrate the alternative which is far more cunning."

the user only draws whilst holding down the left button. Releasing the button stops drawing, and also the program stops monitoring the mouse coordinates as the user is simply re-positioning the pointer: this is of no immediate use to us until the button is pressed again, to commence drawing. This way we know that if we are processing mouse movements we must draw something. How then do we code this? We could specify in the NewWindow structure that we always want to receive mouse movement information but this is rather wasteful and anyway we wanted to demonstrate the alternative which is far more cunning. Intuition has a function called ModifyIDCMP() which requires a pointer to a window and a new IDCMPFlags value as its arguments. Thus to start receiving details of mouse movements, we simply call the routine and OR the existing value with MOUSEMOVE. In practice, we used the macro IDCMPFLAGS, defined at the top of the program to simplify the code.

The global variable, mode, is used to signify whether the program is currently drawing or not. It is employed in the "rubber banding" part of the line-drawing code. The term "rubber banding" means that as long as the the draw line gadget is selected (and hence the global DrawMode is set to FREELINE, another of my macros), we draw a line from the start point (set in the case MOUSEBUTTONS: part of the

doIDCMP() function), to the current position of the pointer, erasing the previous line (coordinates OldX, OldY) in the process. Most drawing programs use this method for allowing the user to see the effects of drawing a line before it is actually rendered for posterity.

MOUSEMOVE events will only be reported as a result of pressing the left button as explained above. Once an event of this class has been established, the program then has to decide which of two routines to call: one for simply plotting pixels and one for drawing lines. The code for this is fairly simple.

The CLOSEWINDOW has the unshakable duty of terminating the program, in the usual way of calling CloseStuff() before exit(). To digress briefly at this point, during the course of testing this program we discovered that the function Exit() - note capital 'E' from the dos.library, doesn't seem to release all the program's memory, about 96 bytes are "lost". Calling exit() with a small 'e' in the amiga.lib results in no loss at all. This may be trivial when you have half a million bytes, but we know VIC-20 programmers who would happily kill for 96 bytes. There again, VIC-20 programmers always were an odd bunch. We have no idea why the two functions are different, perhaps someone can enlighten us!

A GADGETUP event is signalled when the user selects one of the icons on screen. Note that you do not receive a message of this type when one of the system gadgets (depth arrangers, resize etc) is selected as Intuition deals with them itself, and uses different message classes to inform you.

The list of gadgets can get very long, very quickly so it is best to process them in a function of their own. Hence doGadgets(), which receives a pointer to a gadget structure as its only argument. Its sole local variable is a static UBYTE BigLittle which is used to keep track of the current size of the window.

The GadgetID field is easily accessed in the switch statement so we can determine which of the gadgets was selected and act accordingly. The

"To force Intuition to alter the highlighting, RefreshGadgets() is called."

"Stretch" gadget is the first to be tested, again using my macros defined at the top of the program. The functions MoveWindow() and SizeWindow() are self explanatory and we used yet more macros to actually set the new coordinates and size. This has the added benefit of being easy to modify before compiling, and also means that the code can be lifted out of this program for

use in another, which may have a different screen or size limits.

The next gadget is FREEDRAW, and this simply means "plot a pixel in the current colour at every location the pointer passes over as long as the left button is held down". It does this by setting the global DrawMode to FREEDRAW and alters the Flags field of the two draw Gadget structures to ensure that the appropriate icon is highlighted. The actual drawing routine is called in the doIDCMP() function when a MOUSEMOVE is reported. To force Intuition to alter the highlighting, RefreshGadgets() is called. Ideally, Intuition should do all this for us but this is not yet the case. Perhaps in version 1.5 we may be treated to such a luxury? The gadget FREELINE is handled in exactly the same way as FREEDRAW.

Lastly, the four colour gadgets are all handled together as all the selection means is setting the global DrawColour to be equal to the GadgetID. These GadgetIDs were carefully chosen to allow this!

The final two routines actually do the rendering, via calls to the ROM graphics routines. They are themselves called from way up in the MOUSEMOVE part of doIDCMP() and have the coordinates of the mouse as their arguments. These values are automatically made relative to the top left of the window by Intuition so all we must do is ensure that they do not write over any of the borders so the coordinates are compared to the Max and Min values of the window size before any rendering is done. Note that this would be unnecessary if we used a GIMMEZEROZERO type of window but we did not mainly because it is awkward to type!

The last function, doLine() looks rather complex at first sight because of the "rubber banding" feature. This is implemented by keeping track of the previous line drawn and using the COMPLEMENT mode to both draw and erase it. This is important as it means that there is no trace of an erased line once the pointer has been moved around. The window border coding tends to complicate things slightly as the line gets erased once the pointer goes out of bounds. The static variable LineDrawn is necessary to prevent the function from drawing in incorrect lines when the pointer does go out of bounds. Note that the final line rendered for good is actually plotted in the function doIDCMP() when a message of class MOUSEBUTTONS, code SELECTUP is received - the user releases the button. It resets OldX and OldY to zero so the doLine() function does not erase it next time around the loop.

If you do have difficulty understanding the code, try drawing a flow chart!

You never know it may help. **M.N.**

continued from page 14

sents the logical operator OR. C programmers should be familiar with this system. For the rest of you the command reads: DIR *. (asc OR txt OR s). Ok?

To round off this very cursory look at the features of the new system, consider the ARP Shell - ASH. For most purposes, ASH looks and feels exactly like the CBM Shell. But, there is a difference.

Type ? at the prompt and ASH reveals its secret - the whole script language is built-in! That is, commands like IF, EN-DIF, SKIP are already loaded. Also found here are EXECUTE and even EN-DCLI. This means if you run a complex script from within ASH, it will execute much faster than you ever thought possible; plus, less disk accesses mean longer disk life.

I shall leave ARPDOS because this should be enough to show you just what you are missing. What are you waiting for? Get a copy and install it now! We will be covering this superb system much more in future - who needs to wait for Workbench 1.4 when you can have this power NOW. Unreservedly recommended.

M.S.

```
; Yes folks this is it. . .
; a complete 1.3 startup script for ARP
; brought to you by Mark Smiddy and Amiga User International
; ARPDOS courtesy of the Microsmiths
; a lot faster than Commodore's startup - take note CBM!
; delete the REMs for more speed

Addbuffers df0: 15
setpatch
System/FastMemFirst      ; move C00000 memory to last in list
resident CLI L:ASH
setclock opt load        ; if you have an RTC
FF -0 ;speed up Text
mkdir ram:t ram:env ram:clipboards
assign T: ram:t ENV: ram:env CLIPS: ram:clipboards
mount speak: aux: pipe: newcon:
System/SetMap gb          ; Good old CBM proggy
path ram: c: sys:utilities sys:system s: sys:prefs add
cd sys:
LoadWB delay              ; wait for inhibit to end before continuing
endcli >NIL;
```

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Write for details of a brand-new disc magazine produced by ourselves and UGA of Holland, which should mean great things for the European PD scene!

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RED LIGHTNING

SSI

RED LIGHTNING is the latest offering from Strategic Simulations Inc. and is, yet another program that depicts the potential scenario of World War III, fought in Central Europe. The title refers to the author's description of the speed and destructive power attributed to the Soviet land and air forces.

SSI are well known for their attention to detail and Red Lightning is no exception. The amount of data contained in the manual is mind-boggling, with facts and figures for just about every type of weapon system, aircraft and ground unit catered for and documented. The appendices even contain all the formulae that the program uses to calculate the results of each individual conflict, both on the ground and in the air.



Gameplay takes place on the main map screen, which shows the positions of all known units of both sides. Each unit is depicted as an Icon, which represents the unit type (Infantry, Armoured, HQ etc.) at both Brigade and Division level, with every individual vehicle and weapon being taken into account when calculating a unit's strength. Before the game starts, you can choose from three different scenarios and five difficulty levels, plus a host of other factors that will effect the way your forces (and your opponent's forces) will react in any situation. The options include chemical weapon use, the time of year, North Atlantic and Special Operations. Air campaigns and intelligence levels, plus one or two others.

The Info menu gives you a series of full reports on everything from Political inclinations to the weath-

er report, whilst the General menu contains the options to end or quit the game. The third menu, Orders, is the most important, as this is where you initiate future operations for your Air, Marine and Special forces start the movement phase. Even here, the level of data that is taken into account is quite astonishing. Each unit is issued with a number of movement "points" per turn that are used up as the unit moves. The rate at which this occurs is governed not only by the type and efficiency of the unit, but also by the terrain, weather, time of day and season!

When both sides have completed all movement orders, the game goes into the Combat Phase to resolve all air and ground conflicts. Air combat consists of Air Superiority.

The game allows for one or two players, with the computer taking the opposite side in a single player game. As the NATO Commander, your task is to repel the advancing Warsaw Pact forces whilst maintaining the NATO Alliance, which faces ever-increasing pressures as time ticks by. As the head of the Soviet Army, all you have to do is sweep aside the NATO forces and capture the Ruhr. To achieve your individual aims, you must control your armies and make the moves and decisions that a real Commander might have to face if WW III should ever occur.

At the end of the Combat Phase, the computer will run a series of checks that will assess the overall position of both sides and make any amendments necessary to each. The computer then tests to see if either alliance has collapsed, or the final turn of a scenario has been reached. If so, the game ends and victory is awarded. Scenarios may be short (20 turns/10 days), or long (60 turns/30 days) and victory is determined solely by relative alliance morale levels.

The game is supplied on a single disk. Along with the very comprehensive instruction booklet, a map of the area covered by the game is supplied.

I found Red Lightning to be one of the finest programs of its type. Although Red Lightning will never sell as many copies as the more popular arcade-type game, I'm sure that, in computer-wargaming circles, it will quickly become established as a firm favourite.

N.S.

Graphics: 6 Sound: N/A Playability: 8
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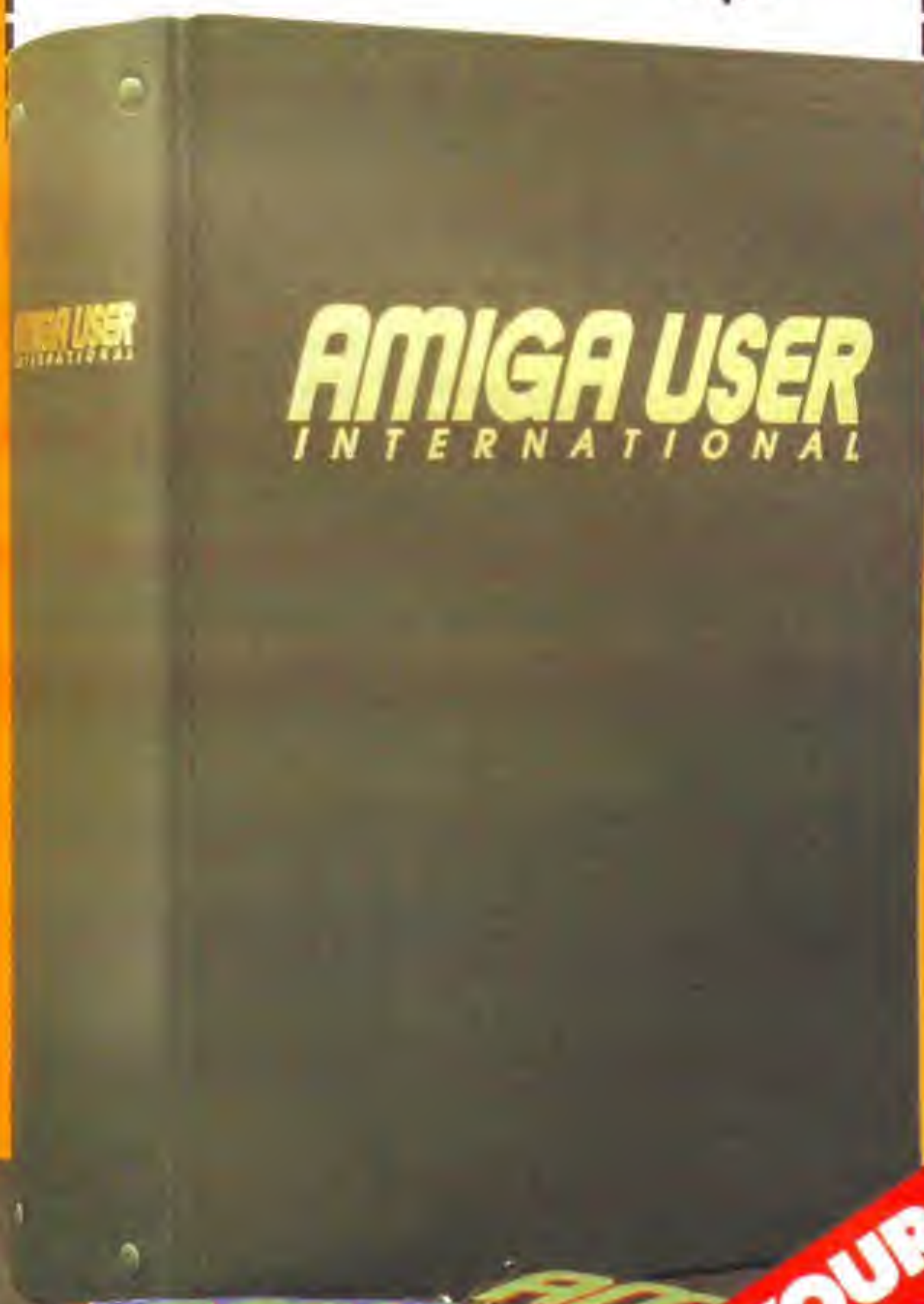
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Model Building for a Relational Data-base (part II)

*The Amiga has several 'heavyweight' database programs which are quite capable of serious use. Using packages like Acquisition and Professional DataRetrieve to their full potential needs some careful planning... this month we see how the 'logical models' developed in the October **AUI** might be translated into a real database definition*

Last month we took a fairly simple applications example and identified a collection of entities and attributes. By analysing and rearranging the various items we ended up producing a set of entity descriptions which had certain desirable properties - they were free of repeating groups, the attributes present in the descriptions were dependent on the whole of the identifying field/s, and the secondary, i.e. the non-identifying attributes, were mutually independent. The database 'buffs' say that entity descriptions with these properties are in 3rd Normal Form.

Is this 3NF criteria sufficient? For 99% of cases the answer is a most definite YES, but there are occasions when other dependencies need to be recognized and dealt with. Fourth and fifth normal forms do exist but their use is not widespread and there's even disagreement about their usefulness - basically the 3NF form is sufficient to remove most of the problems that could occur in the file structure.

However far you take the analysis the result is the same - a logical picture

of the necessary requirements is obtained in a way which is totally independent of any particular database management system. It's the equivalent

of a flowchart for a computer program only instead of giving you step by step instructions it gives you a plan of the data items, their characteristics and the relationships which exist between them.

Flat Files

Before we talk about some of the Amiga's Database programs there's one point that should be made. Once a logical model has been developed you could actually implement it in any way which would provide the necessary file links. Consider, for instance, this entity description...

MAILSHOT (mailshot#, mailshot-date)

This could be represented as a conventional computer file (often called a

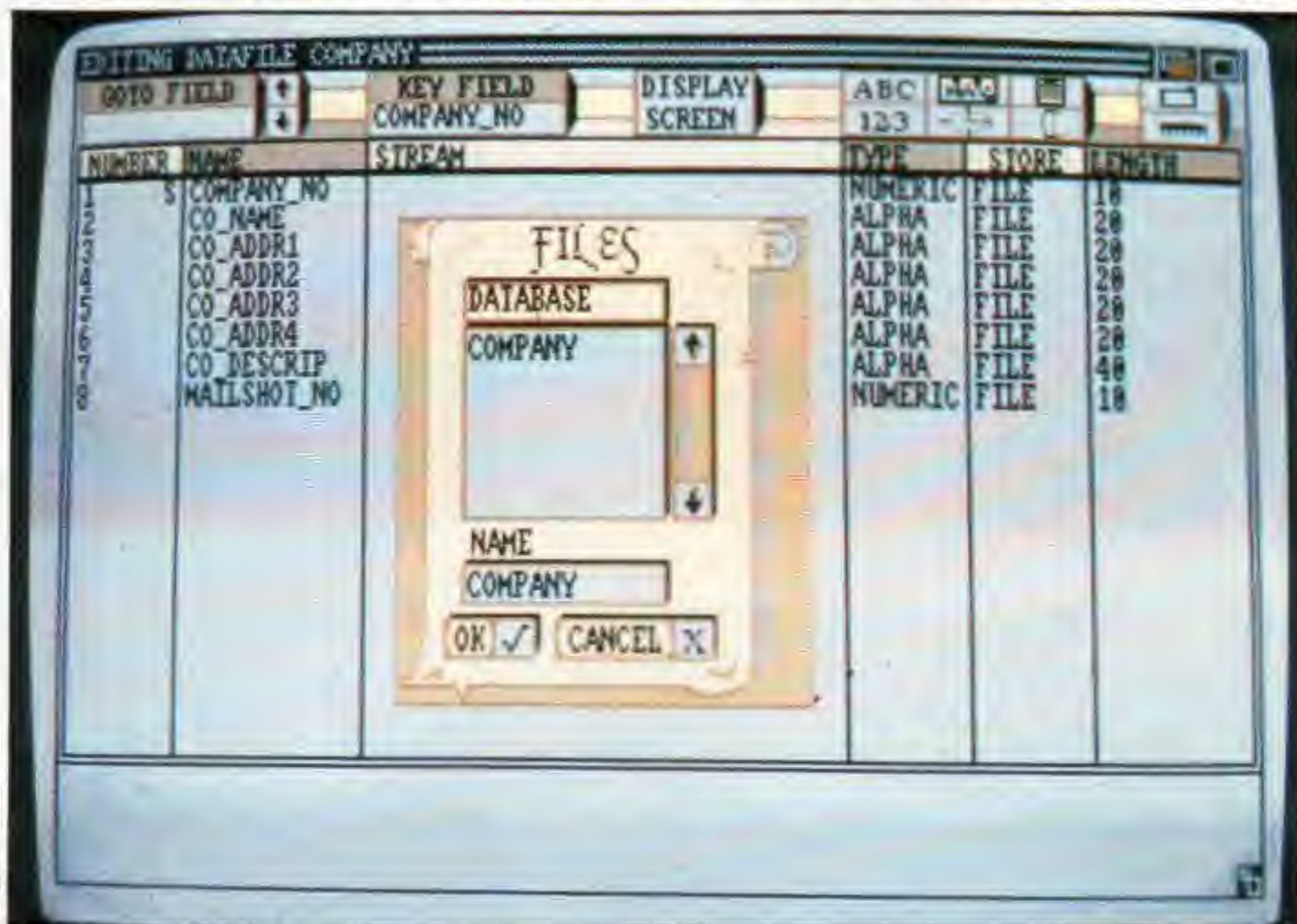


Figure 1.

continued on page 118



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continued from page 116

'flat file'), such as are available from AmigaBASIC, C and other high level languages. In BASIC the above definition could translate into this type of form....

```
OPEN "R",1,"MAILSHOT",10
```

```
FIELD #1 4 AS mailshot-number$, 6 as  
mailshot-date$
```

The entities become random access files, and the attributes become fields within records. Indexing on the appropriate field gives you access to a record via the chosen key! Creating relationships between files is a bit harder... you'd need to use sets of pointers embedded in the file definitions. Whilst you can use ordinary files to implement these types of models it's rather easier (in fact it is an awful lot easier) to use a piece of software which has been especially designed for the process - and that means using a database management system. These offer the means of creating the files in the first place, the means of linking them together, provide the means of offering different users alternative views of the data and allow sophisticated searching and reporting facilities.

The Amiga has three such heavy-weight database programs: *Superbase Professional* from Precision Software, *Acquisition* from Taurus Impex, and *Professional DataRetrieve* from Abacus. They are all relatively expensive, allow many files to be open simultaneously, support complex file searching, and allow applications programming to be carried out using 'BASIC-like' high level development languages. Superbase Professional is probably the most widely used - it is a stable, useful and well supported package although it does not have the relational 'flavour' which the other two heavyweights possess.

"Once the files have been created, links are then introduced between fields from various files."

Acquisition is potentially a powerful Amiga RDBMS orientated package, well suited to implementing the type of logical models which normalization produces. Unfortunately some problems with the early releases, language bugs, no proper tutorial matter etc., gave it a less than ideal start. A revision (release 1.3F), together with extra tutorial material, was provided in order to clear up some acknowledged problems. Part of the early difficulties stemmed from the fact that many users simply did not know how to set up the package to best effect, so the benefits of a package which supported a relational approach were lost. To be perfectly honest I don't use Acquisition regularly

and I am not able to say for sure whether all of Acquisition's earlier problems have been ironed out!

Professional DataRetrieve surprised us all at *AUI* - we knew of no-one using it and when we asked around many retailers seemed to confuse it with the less sophisticated ordinary 'DataRetrieve' program. On first use Professional DataRetrieve seemed less powerful than its competitors. In actual fact it has now become my favourite package and other than a few minor bugs which have come to light with the program editor the program behaves brilliantly. The

tions lead to a set of default master record layouts being defined. Figures 1 and 2 show screenshots of some of Acquisition's creating/bridging displays - it is very well integrated into the Intuition environment and, after a little practice, both creating and bridging modules become straightforward to use. Acquisition uses a 'Pasting' module which allows you to create a particular view of the data and it is this module that produces the display and logical 'front end' which a particular user sees.

Professional DataRetrieve uses a similar approach with individual data-

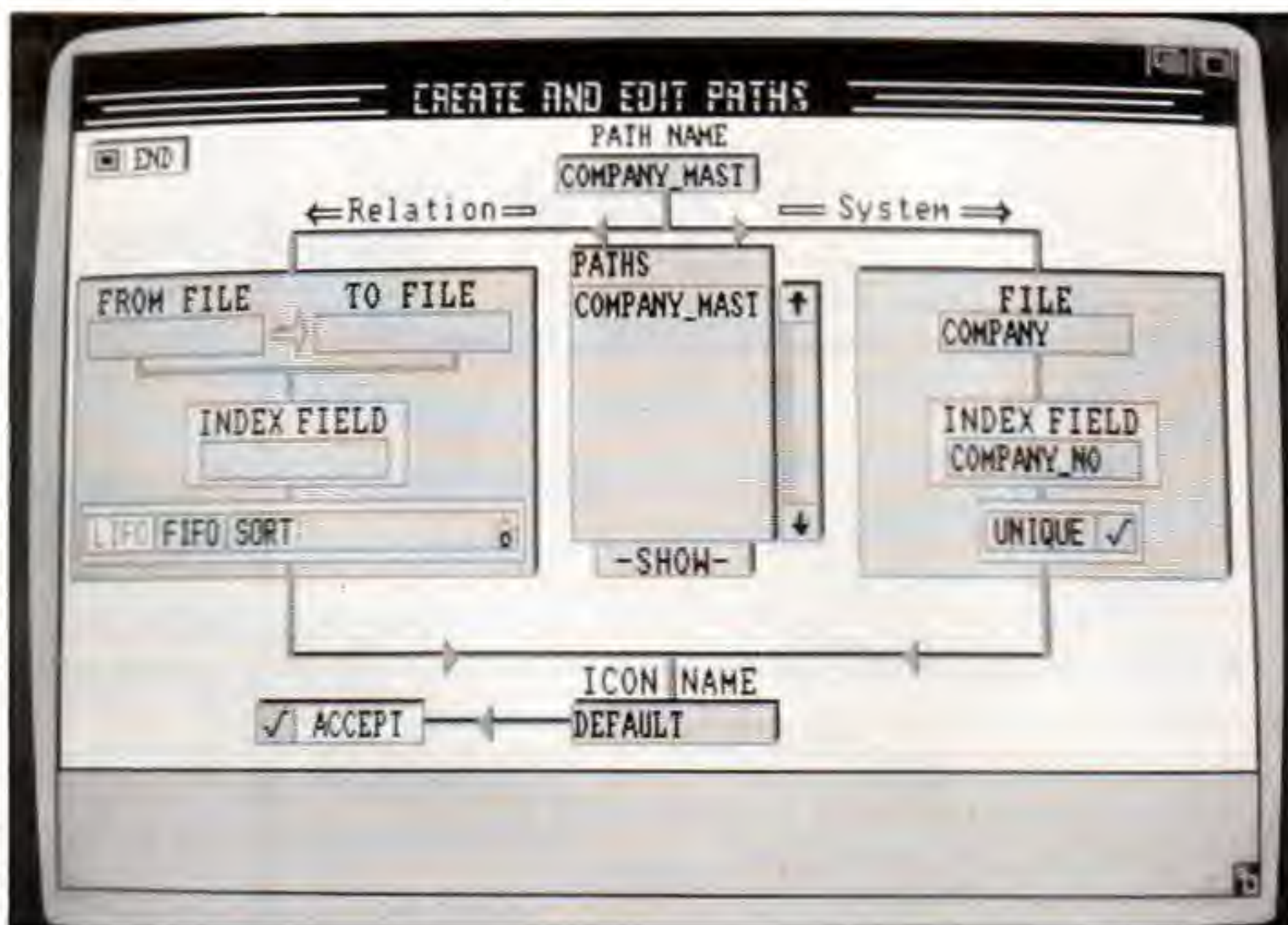


Figure 2.

PROFIL programming language included with Professional DataRetrieve is very nicely structured although, like all such languages, there are a few peculiarities to contend with.

For the implementation of our model, most of the hard work has been done already as far as our example goes. We have got the entity descriptions and all we need do is translate them into equivalent database files. I shall deal with Acquisition first because it is best suited to explaining some of the general RDBMS ideas.

What we are attempting to do is duplicate our logical model as a series of database files. We create a database for each entity and for each file we include a set of record fields based on our attribute lists. During this initial definition period we define the field which will be the primary identifying field, i.e. the key field. Once the files have been created, links are then introduced between fields from various files.

Acquisition provides a 'Creating' module for preparing the file definitions and a 'Bridging' module for producing links between databases. The result is a file structure that, if you have it right, will mirror the logical model. Initial defini-

base files set up to correspond to each entity description (Figure 3 shows a typical file creation screen). Like Acquisition the initial definitions produce a set of master files but file links and the final views which a user would see are produced in a slightly different way: Professional DataRetrieve is a 'mask orientated' relational database. You

"Within 15 minutes or so that user has another view of the data especially tailored to what he or she wanted."

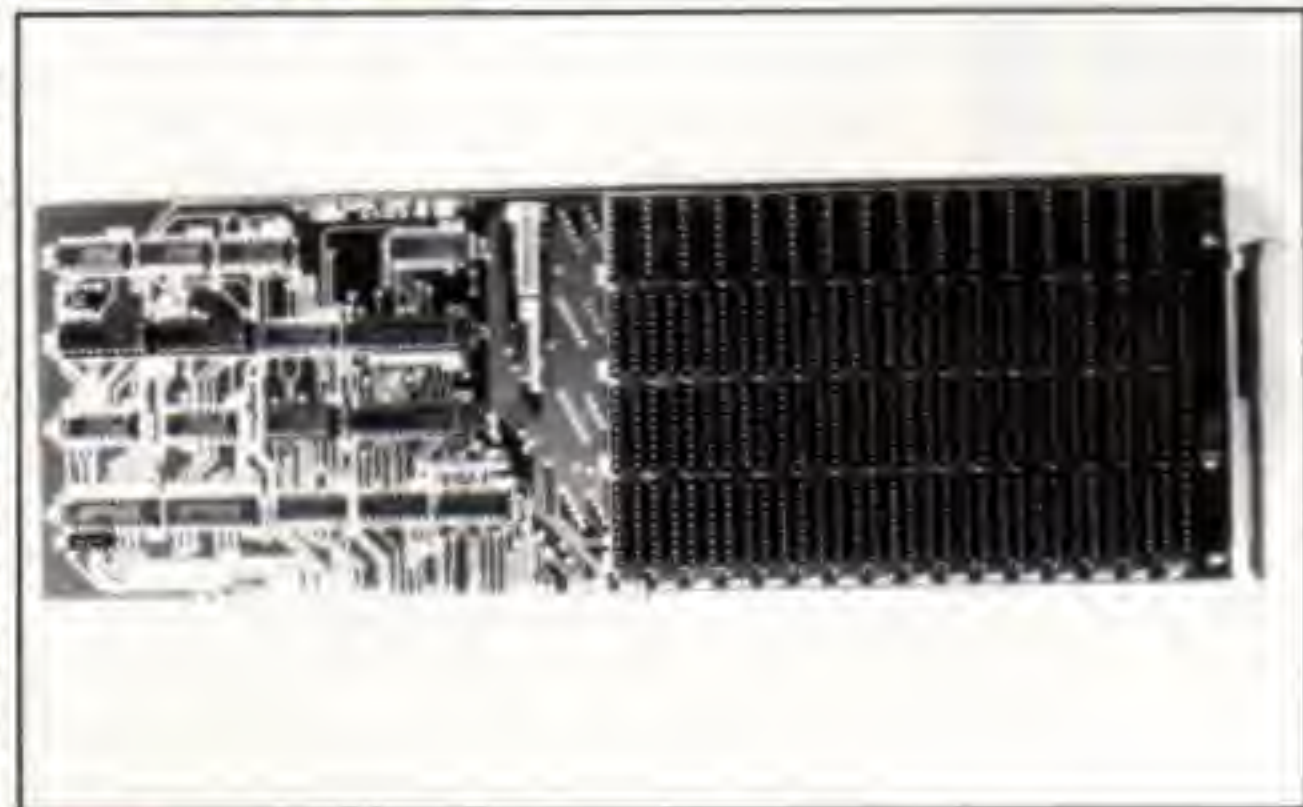
can get the full details from *AUI*'s review (May 89) but in short you build screen, list and printer 'masks', which can pull in data from the fields of any defined databases - figure 4 shows a couple of example screen masks. Links are produced by creating indexes and then using these indexes during the setting up of the mask definitions.

I have been talking about masks and logical views, so let us give you an example of the sort of flexibility a RDBMS could offer: Imagine that this

continued on page 120

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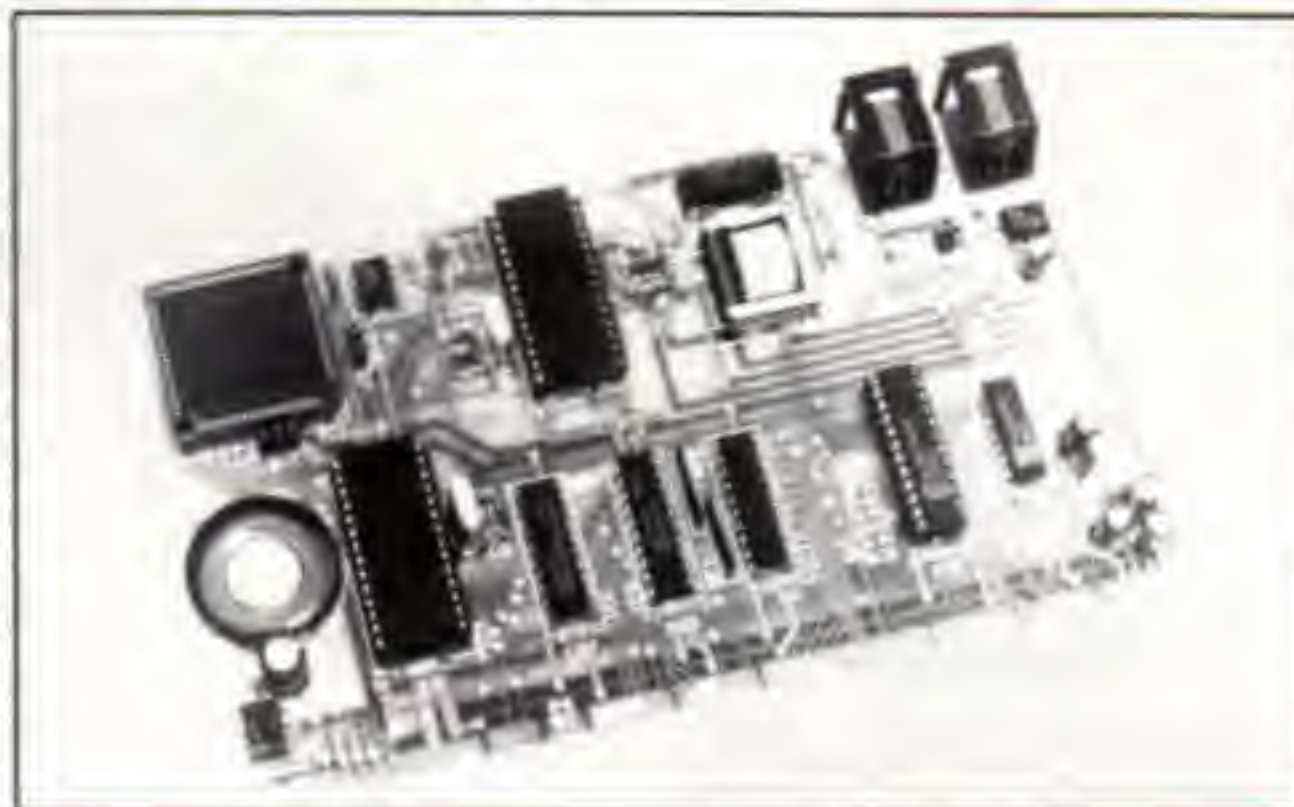
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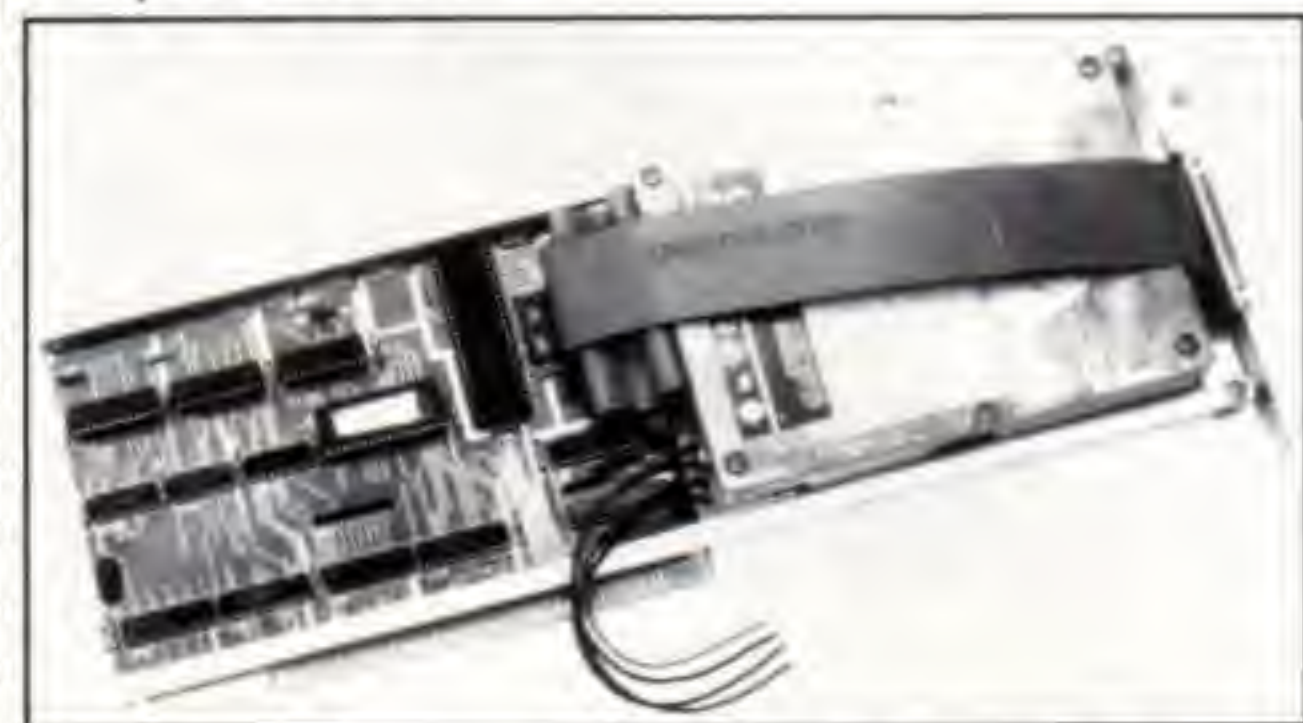
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Figure 3.

example database is up and running when someone comes up and says something like this.....

"My VDU terminal is always on during the day, would it be possible for me to access the database so that when a service company phones me I could, by typing in the Company's name, get an 'up to the minute' display of available contacts, just in case our printed list has changed since the last time it was printed?"

This is an easy one..... with Professional DataRetrieve (for example) you would simply select the 'Edit Screen Mask' option, bring in the Company-Name field from the Company database, and then bring in the name, address and telephone number fields from the Contacts database. Within 15 minutes or so that user has another view of the data especially tailored to what he or she wanted. It does not matter that other users will be making different use of the data, nor does it matter to the existing users that a new use has been found for the data.

That sort of partial use of existing data is relatively straightforward but supposing someone now comes along and makes this suggestion...

"Having mailshot number and mailshot date is all very well for most of the office staff, but I deal with the mailshot queries and when someone phones up to discuss something I've got the reference numbers but no details as to what they refer to - I have to go over to the filing cabinet to physically get out the corresponding mailshot text. Why can't we have the mailshot text data stored in the database as well?"

Go back to last month's article and have a look at the very first entity description, the one for COMPANY before we translated it into 3NF form. Imagine it implemented as a flat file arrangement

and ask yourself how easy it would be to re-program that file description as it stands - knowing that the file already contains data and would (because of

"Because we produced a clean model an extra field can easily be added, the user who wanted his mailshot data 'on-line' gets the extra fields and a mask/view which lets him use it."

repeating groups) contain variable length records which would need to be accessed randomly. Take it from me it would not be easy!

Now look at our final MAILSHOT

entity. It's a much simpler arrangement - all of the fields are cleanly related to the identifying (key) field and you could almost imagine just tagging an extra field on the end of the description. That is essentially what an RDBMS system is able to do but it does it in a way which does not interfere with existing applications. Because we produced a clean model an extra field can easily be added, the user who wanted his mailshot data 'on-line' gets the extra fields and a mask/view which lets him use it, and the rest of the users continue using their applications programs seeing just mailshot-number and mailshot-date items just as before - perhaps not even aware that any changes had been made to the underlying database structure.

That then is the real power of the RDBMS and relational database methodology..... it offers a means of producing a model and therefore a database file structure that is easily modified, and at the same time allows different users to view and use the overall database in any number of independent ways.

What sort of problems will you encounter? You will find that ALL RDBMS systems have limitations on the models which they can handle. Programs like Acquisition and Professional DataRetrieve cannot implement relations on concatenated (multiple) key fields, and so record definitions like COMPANY-CONTACT would need to be revised - sometimes (as would be the case for our example) it is possible to accept a slightly modified form, other times you can use multiple field calculations to automatically handle the calculation of a single key. Most of the time you are best off just accepting any limitations..... because even with a RDBMS system that has a few constraints your final database will still be far more flexible than almost any alternative database arrangement!

S.M.



Figure 4.



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*Stuart Williams has a good old 'Nag' about
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Looking for a good reason to persuade the boss (or your mum!) to let you buy an Amiga for serious home or office use? This month I look at three very practical programs from the George Thompson Services Public Domain and Shareware 'Home Business Pack'.

NAG

'Nag' is an electronic appointment calendar for the Amiga. In addition to keeping track of your appointments, your anniversary, and your mother-in-law's birthday, 'Nag' can be instructed to gently remind you by popping up a display of the next 'nagged event'. It will hang around flashing or beeping or playing a digital sample and/or using the Amiga's voice to 'NAG' (remind) you every 30 seconds until you respond. You can also turn the Nag off - unlike your mother-in-law!

***"You can set up the
program so that you will
be Nagged (reminded)
with Flash, Beep,
Sample, and/or
Voice."***

You can set up the program so that you will be Nagged (reminded) with Flash, Beep, Sample, and/or Voice. It allows you to set times, and types of nags for each individual event. NAG can play any file as SOUND data. It will set Period from an IFF format file.

Within the program itself, simple 'in-

tuitive' gadget-driven menus follow WORKBENCH conventions. In addition, a Configuration file sets up NAG to your preferences.

The program is surprisingly powerful, allowing setting of up to two years of 99 events per day. The buffer size is variable, from 2K bytes to 2 megabytes. NAG includes a very fast gadget-driven editor with COPY & RECALL facilities and 'Special Date' flags.

In use, the program is simplicity itself, particularly since a Calendar gadget quickly shows any day of any month of any year! It also features a comprehensive Print routine, enabling the production of assignment sheets, printout of a personal Diary, etc. Last, but not least, NAG includes a Search routine and a 'Missed Nags' routine, as well as a 'SingleShot' Nag Switch.

There is an extensive documentation file detailing how you may customise NAG to your requirements and complete its initial configuration. It is assumed that you have basic experience of using the CLI (Command Line Interface) of AmigaDOS.

For those of you who rely on your filofax and are heavily into time management, NAG could prove extremely useful. Like all appointment reminders, however, you will need to maintain a strict regimen of updating and consulting the program. If the first thing you do on entering your office is switch on your computer, why not let your Amiga NAG you for a while?

NAG Version 1.6 (c) 1987-1988, the ultimate Amiga reminder, is compatible with the Amiga A500, A1000 and A/

B2000 computers. It is Shareware, written by Richard Lee Stockton of Washington State, USA. The requested contribution is \$10.

QUICK-BASE

Quick-Base is a MailBase Management utility that allows you to define and maintain records of family, friends, businesses etc. that you correspond with. Think of it as a simple address book or Rolodex file which can be accessed without leaving your Amiga. Quick-Base allows a maximum of 200 records per file.

The program is multi-tasking, and appears on screen as a simple lined index card, known as the PAGE, listing the first line of each record in order that you may select records with the mouse

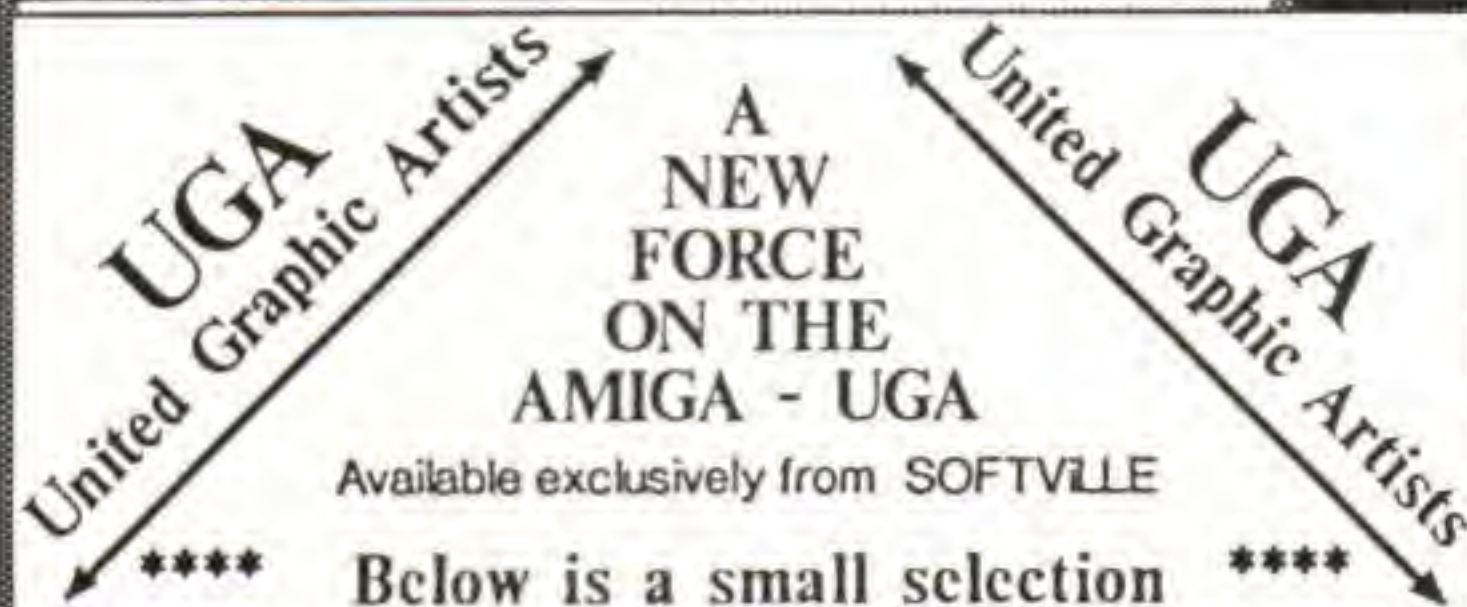
***"When the new Add
Record option is
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Just key in the fields in
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and manipulate them using the options accessed from the buttons on the right-hand side of the screen. Options are selected by moving the Mouse Pointer over the on-screen button you wish to select and pressing the left mouse button.

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sion, and the window will disappear. If you wish to leave a field empty, just hit RETURN.

When Edit/View is selected, a window will again appear over the page, including all information in the selected record, or if none are selected, the first record on the page. Records are selected by simply moving the pointer over the name and pressing the left button. The selected name will be highlighted. This must be done before any options are selected.

When Delete Record is selected, a window will appear including the name of the selected record. Selecting OK deletes the record, No Way leaves it intact.

When Search String is selected, a window will appear including two strange-looking eyeballs. Key in the string you wish to look for. Only the first field in each record following the selected record will be searched. The final option is Quit/Exit, which speaks for itself! Page scrolling is selected by moving the Mouse Pointer over one of the arrows to the right of the page and pressing the left button. Large arrows scroll up or down one whole page (thirteen records), or small arrows a record at a time.

When the Printer icon is selected, a window opens including six things: three format options, a PRINT option, a CANCEL option, and a number. To print a list of all the records in a file, select the left-most format option and then PRINT.

To print mailing labels instead of a simple list, select the record for which you want labels made. Select Printer. Select the middle format option. Select

"While it is no Superbase or dBASE, Quick-Base is a neat little program that does a limited job well."

the number and key in the number of labels you want printed. Select PRINT. This works with standard sized tractor-fed labels.

The final format allows you to print a Phone List. To use this, you select the right-most format option and then PRINT. Similar easy to use options are supported to SAVE and LOAD your data files.

While it is no Superbase or dBASE, Quick-Base is a neat little program that does a limited job well. If you are forever reaching for an address book when writing letters, it could save you some time, and add to the usefulness of your computer.

Quick-Base is written by Kevin Harris of the USA, and is in the Public Domain.

JOURNAL

Journal provides a simplified approach for your financial record keeping requirements. You can use the system for a variety of purposes, such as keeping track of bank accounts, credit cards, accounts receivable, accounts payable, and income and expenses for your

"You may establish any number of accounts (limited only by disk space) and enter debit or credit transactions as they occur."

club. You may establish any number of accounts (limited only by disk space) and enter debit or credit transactions as they occur. As transactions are entered, a running balance is provided at the bottom of the screen. An option is provided that will allow you to print a statement for any given account.

An area in the middle of the screen is used for entering and viewing transactions. Along the right side of the screen are several orange gadgets that are used to perform various data entry and editing functions. If you position the pointer over the title bar and depress the right mouse button, you will see menu which will allow you to open, close, print and delete files. The HELP key may be depressed at any time to determine what your options are.

There are several primary menu functions:

Open Account - Before you enter transactions you must open an account. After selecting this option, you will be presented with a file requester that will allow you to specify the account name. If a database for the specified name already exists, the data will be read into memory. If a database for the specified name does not exist, one will be established.

Delete Account - Allows you to specify the name of the account to be deleted.

Print Statement - This option causes a statement to be printed for the account that is currently open.

Quit - Terminate the program.

Close No Save - If you select this option, the changes you have made to the account that is currently open will not be saved.

To use the on-screen gadgets, you simply position the pointer over the appropriate one and then depress the left mouse button. The functions that may be performed are as follows:

Top - Selecting this gadget will cause the top 19 lines of the transaction database to be displayed.

Insert - Selecting this gadget will allow you to insert additional transac-

tions.

Information that may be entered includes the date of the transaction in the form (MM/DD/YY); a description of the transaction; a reference field for any desired information such as a cheque or invoice number; debit amounts; and credit amounts. The change gadget will allow you to change a transaction. Selecting the delete gadget will cause the transaction at the location of the cursor to be deleted.

Use of the find gadget will allow you to search the database for the occurrence of any specified argument. The remove gadget will cause the transaction at the location of the cursor to be temporarily removed from the database. Likewise, the reinsert gadget will cause a removed transaction to be reinserted immediately above the current location of the cursor. The Remove/Reinsert options are used to move a transaction from one location to another within the database. Finally, the bottom gadget will cause the last 19 transactions in the database to be displayed.

"Journal is a simple but effective alternative to a spreadsheet, using methods that will be familiar to those who normally use a hardback book for small-scale accounts."

The proportional gadget at the extreme right of the screen may be used to scroll forward and backward a full screen at a time, using the mouse. The Up and Down Arrows may also be used to scroll forward and backward through the database.

Journal is a simple but effective alternative to a spreadsheet, using methods that will be familiar to those who normally use a hardback book for small-scale accounts. If you want to simplify your calculations without complicating your computing, it could be the program for you.

Journal is written by Hal Carter of Florida, USA, and is Shareware, with a suggested donation of \$15.

The G.T.S. Home Business Pack costs £19.99 including postage, and contains eight disks including a word-processor, spell checker, spreadsheet and more, in addition to the three programs reviewed here.

Overall, it represents remarkable value for the Amiga user wanting to use practical home or simple office applications without spending a fortune.

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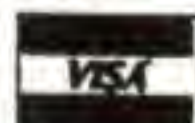
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half-century just waiting to be claimed!

As if that wasn't enough, Digital Integration are giving away ten copies of their superb F-16 Combat Pilot, reviewed in this very issue. So, the first ten correct entries will receive both a copy of F-16 Combat Pilot and a Super Professional! The remaining forty sticks will go to the following lucky winners to be pulled from the hat. Just answer the questions below, and get them off to us without delay.

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 - b) Height Utility Data?
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A review in the June '88 AUI concluded: "The hardware is well built, it has excellent software and is well documented."

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